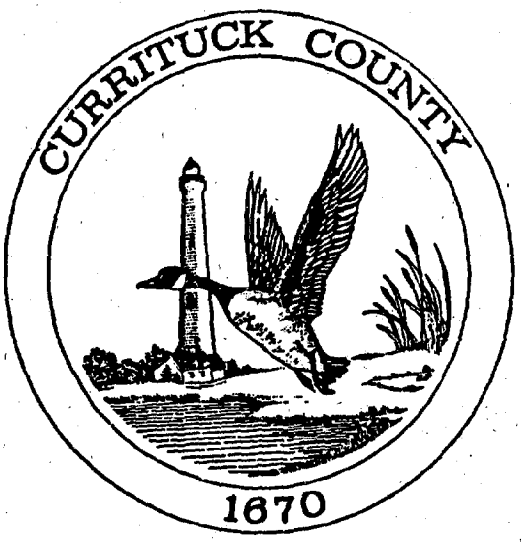
South Carolina Coastal Zone Management Program

1985

CURRITUCK COUNTY

LAND USE PLAN



Prepared By

Talbert, Cox and Associates, Inc.

Currituck Approval 1/6/1986
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1985

CURRITUCK COUNTY
LAND USE PLAN UPDATE

Prepared By

CURRITUCK COUNTY PLANNING BOARD

and

CURRITUCK COUNTY BOARD OF COMMISSIONERS

Assistance By

TALBERT, COX & ASSOCIATES, INC.

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CURRITUCK COUNTY LAND USE PLAN

A. Information Base

The 1985 Land Use Plan Update for Currituck County has been prepared in accordance with requirements of the North Carolina Coastal Area Management Act (CAMA). Specifically, this document complies with Subchapter 7B, "Land Use Planning Guidelines," of the North Carolina Administrative Code, as amended, July 9, 1984.

The initial Land Use Plan was prepared for Currituck County in 1976, and the first update in 1980. According to the Land Use Planning Guidelines, the major purpose of periodic updating of local land use plans is to identify and analyze newly emerging community issues and problems. An additional element which was not required in either the 1976 Plan or the 1980 Update is a "Storm Hazard Mitigation, Post-Disaster Recovery, and Hurricane Evacuation Plan," and is required to be included in the 1985 Update. This element is designed to help local governments coordinate effective policies and actions relating to the impact of hurricanes or other severe storms.

The guidelines further give the following objectives the update should meet:

- -- to further define and refine local policies and issues;
- -- to further examine and refine the land classification system and the land classification map;
- -- to assess the effectiveness of the existing land use plan and its implementation;
- -- to further explore implementation procedures, and;
- -- to promote a better understanding of the land use planning process.

Both the 1976 Land Use Plan and the 1980 Update provided much of the needed information base for this update. However, in many cases, new information had to be developed or has become available since the 1980 Plan was completed. A number of data sources were used during the preparation of this plan to prepare updated analyses of population, housing, economics, (including agriculture, fisheries, and forestry), and existing land uses. Most of the data came from primary and secondary sources in the form of direct contacts with representatives of various state and federal agencies and/or previously published documents or reports. Also, "windshield" surveys were conducted to obtain data on existing land use patterns. Interviews were conducted with various County officials, and extensive effort was made before beginning the planning process to obtain citizen input on issues of local concern. Specifically, four citizen information meetings were held throughout the County in November, 1984, to give citizens the opportunity to become familiar with the planning process and to

receive their input on planning issues affecting Currituck County.

B. Present Conditions

1. Population:

Currituck County is located in the northeastern most corner of North Carolina and directly south of Tidewater Virginia. The 1980 census indicated that Currituck County had a population at that time of 11,089 people which represents 4,113 more people than the 1970 census of 6,976. Table I reflects the population and growth rate for the County since the 1940 census and projected population for 1985, 1990 and 1995 based on N. C. Department of Administration estimates.

Table I

Year	Population	Number Change	% Change
1940	6,709	-	-
1950	6,201	-508	-7.6
1960	6,601	+400	+6.5
1970	6,976	+375	+5.7
1980	10,089	+4,113	+59.0
*1985	13,171	+3,082	+30.5
*1990	15,257	+2,086	+15.8
*1995	17,913	+2,756	+18.1

Source: U. S. Census information by ARPDC
Projections by N. C. Department of Administration

As shown in Table I, the increase in population from 1970 to 1980 of 4,113 people represents a 59.0% increase in population. Based on N. C. Department of Administration projections, the County can anticipate continued rapid population increase during the 10-year planning period. Specifically, a 30.5% increase is projected between 1980 and 1985, 15.8% from 1985 to 1990 and an additional 18.1% increase between 1990 and 1995. If these projected population estimates come to fruition, Currituck County will experience an additional population increase from 1980 to 1995 of 64.4% over this 15-year period which represents an increase in population from 10,089 to 17,913 by 1995.

As reflected in Table II, Currituck County is the second fastest growing county in the State of North Carolina, second only to Dare County.

Table II
Growth Rate Compared to State and Other Counties

	Change 1970-80	Under 18 yrs.	18-64	65 & Over
1. Dare County	91.2%	23.2	64.1	12.6
2. Currituck	59.0	28.6	59.6	11.8
3. Brunswick	47.7	30.2	59.0	10.8
4. Stokes	39.1	30.1	60.0	10.0
5. Henderson	36.9	25.7	56.7	17.7
6. Watauga	35.3	21.1	69.3	9.6
7. Orange	33.5	20.6	71.9	7.5
8. Wake	31.9	26.2	66.4	7.4
9. Swain	30.8	29.1	56.4	14.5
10. Davie	30.5	28.8	60.9	10.2
11. Carteret	30.0	26.4	62.0	11.6
State of North Carolina	15.7%	28.2	61.6	10.3

Source: 1980 Census

As County officials prepare to accommodate this anticipated growth in population, two factors are of utmost importance in this planning process: 1. Which age groups are growing the fastest based on current census information; and 2. Where in the County is most of this growth taking place. As shown in Table III, the largest increase in population between 1970 and 1980 has occurred in the Moyock Township area. Specifically, the population in this area had increased by 1,601 people during that 10-year period. The second fastest growing area of the County is the Crawford Township area which had increased from 2,487 people in 1970 to 3,974 people in 1980. It is worth noting that both of these areas have easy access to the highway corridor to Tidewater, Virginia.

Table III
Population by Township

Township	1960	% of Total Population	1970	% of Total Population	1980	Percent of Total Population	1970-80 Population Increase
Moyock	1,207	18.3	1,494	21.4	3,095	27.9	1,601
Crawford	2,332	35.3	2,487	35.7	3,974	35.8	1,487
Poplar Branch	2,622	39.7	2,487	35.7	3,114	28.1	627
Fruitville	440	6.7	508	7.2	906	8.2	398
Total County Population	6,601	100%	6,976	100%	11,089	100%	4,113

Table IV
Population by Age Group

Age Group	1970	1980	Increase in Population	Percent Increase
Under 5	541	790	249	46.0
5-9	669	816	147	22.0
10-14	741	926	185	25.0
15-19	628	1,011	383 (4)	61.0
20-24	447	924	477 (2)	107.0
25-29	393	891	498 (1)	127.0
30-34	339	779	440 (3)	130.0
35-39	364	735	371 (5)	102.0
40-44	428	566	138	32.0
45-49	362	531	169	46.7
50-54	414	640	226	54.6
55-59	435	597	162	37.2
60-64	390	580	190	48.7
65-69	296	525	229	77.4
70-74	240	354	114	47.5
75-79	156	219	63	40.4
80-84	82	121	39	47.6
85 and over	51	84	33	64.7
	6,976	11,089	4,113	59.0

As illustrated in Table IV, the fastest growing segment of the population between 1970 and 1980 has been the 15-39 year age group. If this trend continues during the ten-year planning period, the County can anticipate a heavy demand on schools and the need for additional housing with all related services such as fire and police protection, health care and social services if local job opportunities can be developed for those local residents in the lower age groups (15-19 age group).

Seasonal Population

In an effort to establish information on seasonal population for Currituck County, we contacted Mr. Bill Tillman of the State Office of Management and Budget. Mr. Tillman indicated that this type of information is not generated by their office. In an effort to generate seasonal population information, we contacted the manager of Hampton Lodge Campground. They typically have approximately 200 campers each weekend during the June through August vacation season. Camper occupancy ranges from 2 to 6 people per camper. Using an average of 4 people per camper, the County's population increases by approximately 800 people each weekend during the summer months from this one facility. Based on our windshield survey of the County, Bells Island has a similar camp site which appears to contain less than 50 campers. Using the same average of 4 per camper, this facility would generate a seasonal population increase of approximately 200 people per weekend.

Based on October, 1984, aerial photography of the Currituck outer banks, we determined that there were at that time 514 dwelling units on the outer banks. Based on information from the County Building Inspection Department, we have learned that 49 additional dwelling units have been constructed or are under construction as of May, 1985. Based on this information, we have estimated that approximately 563 dwelling units exist on the outer banks or will be ready for occupancy during the 1985 summer season. Mr. Mickey Dozier of the County tax office, indicated that 90 to 95% of all dwelling units on the outer banks are vacation homes. Based on that information, we have estimated that 507 to 535 units on the outer banks are used by seasonal residents. Using the 4.5 persons per unit used in the 1980 Land Use Plan, we estimate a seasonal population for the outer banks of 2,268 to 2,407 people during the peak summer season.

Unlike Dare County to the south, Currituck does not have motels, hotels, and related facilities to draw seasonal visitors. However, with a recently opened public road and approved PUD developments with commercial use, this will probably soon change.

Although there are other facilities scattered throughout the County used for seasonal purposes such as hunting, fishing and summer vacations, it would be difficult to establish more precise seasonal population information without a very detailed survey and analysis of these facilities. The purpose of the information provided in this report is to illustrate that a rather significant seasonal population does impact on County facilities.

2. Economy.

As indicated in the 1980 Land Use Plan, agriculture was at that time, and still remains, a very important part of Currituck County's economy. However, as shown in Table V and based on the most current information from the 1984 Profile of North Carolina counties, Currituck County farmers experienced a reduction in farm income during the 1982 farm season as compared to the 1981 season. Also, worth noting is the fact that slightly more farmland was available in 1982.

Table V
Farmland and Income

Year	Acres of Harvested and Idle Cropland	Estimated Farm Income
1970	39,154	$ 6,621,000
1971	40,848	5,760,000
1972	39,471	7,173,000
1973	43,109	11,123,000
1974	41,590	14,938,000
1975	38,914	13,013,000
1976	41,328	15,046,000
1977	38,545	11,672,000
1978	40,614	9,288,000
1979	41,500	12,432,000
1980	*	*
1981	52,500	18,078,000
1982	52,600	17,311,000
1983	*	*
1984	*	*

* Information not available in printed report

Source: 1984 Profile of North Carolina Counties

Table VI reflects Gross Retail Sales in Currituck County from 1969-1970 through 1982-1983 which is the last period information is available. As shown in Table VI, there has been a substantial increase in retail sales between 1979-1980 and 1982-1983. Specifically, the County has gone from $44,862,970 in 79-80 to $52,523,104 in 1982-83. Since the inflation rate has dropped substantially during a portion of this period, these figures represent a fairly sizeable increase in retail sales. Although the sales data does not pinpoint the location of sales, it can be assumed that a large percentage of these sales are made by retail businesses along the 158/168 highway corridor and that these sales will most likely continue to increase during the next ten years as more development takes place on the outer banks of Currituck and Dare and as people contiue to travel to those locations from Tidewater Virginia.

Table VI
Sales and Use Tax Gross Collections and Gross Retail Sales

Fiscal	Sales and Use Tax	Retail Sales
1970-71	$ 138,174	$ 11,149,289
1971-72	167,159	12,457,525
1972-73	212,806	17,205,298
1973-74	257,019	25,605,882
1974-75	298,907	34,084,482
1975-76	362,394	35,103,924
1976-77	393,884	39,362,049
1977-78	473,650	40,292,764
1978-79	547,412	40,168,364
1979-80	579,790	44,862,970
1980-81	612,046	46,432,333
1981-82	697,674	50,913,669
1982-83	757,291	52,523,104

As shown in Table VII, based on the most recent information available, Currituck County had a labor force of 5,270 people in 1983 with an unemployment rate of 8.3% or 440 people unemployed. As Table VIII shows of the remaining 4,830 people employed in 1983, 4,040 were non-agricultural wage and salary employees with only 140 being agricultural employees. Based on these figures, it is apparent that farm income is being generated with fewer employees needed with retail and service jobs, including public sector employment providing more and more of the employment opportunities and, thereby, economic growth for the County.

Where are many of these services, retail and manufacturing jobs being provided? As reflected in Table IX, 59.7% of employed County residents in 1980 were commuting outside of Currituck for employment. Of the 2,107 persons commuting outside the County in 1980, 1,417 or 67.3% were traveling to Tidewater, Virginia for employment.

Table VII
Labor Force

Year	Total Labor Force	Rate of Unemployment
1975	2,720	6.3%
1976	2,610	6.5%
1977	2,890	6.6%
1978	4,660	3.9%
1979	4,880	4.9%
1980	4,760	6.9%
1981	5,110	6.7%
1982	5,120	7.0%
1983	5,270	8.3%

Source: Profile: North Carolina Counties, 1984

TABLE VIII

CURRITUCK COUNTY

ANNUAL AVERAGE LABOR FORCE ESTIMATES 1983-1974

	1983	1982	1981	1980	1979	1978	1977*	1976	1975	1974
CIVILIAN LABOR FORCE 1/	5,270	5,100	5,110	4,980	4,880	4,820	2,970	2,860	2,720	2,710
UNEMPLOYMENT, TOTAL	440	360	340	340	240	190	190	190	170	140
Rate of Unemployment	8.3	7.1	6.7	6.8	4.9	3.9	6.4	6.6	6.2	5.2
EMPLOYMENT, TOTAL	4,830	4,740	4,770	4,640	4,640	4,630	2,780	2,670	2,550	2,570
Agricultural Employment	140	140	160	170	180	200	220	260	250	240
Nonag. Wage & Salary Employ.	4,040	4,060	4,110	4,010	4,010	3,990	2,270	2,150	2,050	2,100
All Other Nonag. Employment 2/	650	540	500	460	450	440	290	260	250	230
INDUSTRY EMPLOYMENT BY PLACE OF WORK 3/										
Manufacturing 4/	100	80	120	150	150	160	180	150	120	130
Nonmanufacturing	1,260	1,210	1,140	1,080	1,090	1,020	930	930	890	810
Construction	90	70	90	70	100	100	100	100	60	70
Trans., Comm., & P. Util.	40	40	40	40	40	30	40	30	20	30
Trade	370	340	310	290	300	280	230	240	250	210
Fin., Ins., & Real Estate	40	40	50	50	40	40	40	40	40	40
Service	170	160	120	110	120	90	70	70	70	90
Government	550	560	530	520	490	470	440	440	440	360
Other Nonmanufacturing 5/	0	0	0	0	0	10	10	10	10	10

1/ Data based on place of residence.
2/ Includes nonagricultural self-employed workers, unpaid family workers, and domestic workers in private households.
3/ Industry segments are not additive to the "Nonag. Wage & Salary Employ." shown under "CIVILIAN LABOR FORCE" since labor force data are by "place of residence."
4/ Includes Food; Textiles; Apparel; Lumber & Wood; Chemicals; Rubber; Stone, Clay, & Glass; Fab. Metals; and Trans. Equipment.
5/ Includes Agricultural Services and Mining.
* Data prior to 1978 not comparable due to change in developing place of residence ratios.

TABLE IX

COMMUTING PATTERNS FOR CURRITUCK COUNTY
1980

COUNTY/CITY		OUT-COMMUTERS JOURNEY FROM CURRITUCK TO:	IN-COMMUTERS JOURNEY TO CURRITUCK FROM:
Beaufort		12	.
Bertie		.	3
Camden		57	57
Dare		283	20
Pamlico		8	.
Pasquotank		241	112
Perquimans		20	22
OUT OF STATE			
Dade	FL	11	.
Warren	PA	14	.
Chesapeake City	VA	366	13
Hampton City	VA	9	.
Newport News City	VA	8	.
Norfolk City	VA	418	12
Portsmouth City	VA	247	.
Virginia Beach City	VA	369	50
Work At Sea		44	.
TOTAL REPORTED COMMUTERS		2,107	289
PERCENT OF EMPLOYED RESIDENTS		59.7%	
PERCENT OF EMPLOYED IN COUNTY			16.9%
NONCOMMUTING WORKERS		1,425	
PERSONS WORKING IN COUNTY		1,714	
EMPLOYED RESIDENTS		3,532	
NET COMMUTING		-1,818	
WORKPLACE NOT REPORTED		289	

Source: North Carolina Commuting Patterns, 1985

In summary, Currituck County's economy will most likely continue to expand, particularly in the tourist-related area with more and more people traveling through and to the County. The County's agricultural base will continue to be an important part of the County's economy, but will continue to employ fewer and fewer people. As the younger population continues to grow, it will be extremely important for the County to work to expand employment opportunities to keep young people in Currituck County.

3. Existing Land Use

a. Background

The existing land use maps consist of the following sheets that were originally prepared in 1979 by Howard T. Capps, P. A. and updated in November, 1984, by Talbert, Cox & Associates, Inc.:

Powells Point S.E.
Powells Point N.W.
Powells Point N.E.
Barco Point S.W.
Elizabeth City S.E.
Barco Point N.W.
Elizabeth City N.E.
Elizabeth City N.W.
Knotts Island
Creeds
Moyock
Lake Drummond S.E.

This series of maps were prepared using the USGS quad maps as a base at a scale of 1" = 2000'. The Currituck outer banks map prepared by Howard T. Capps, P.A. in 1977 has been updated by TCA using October, 1984 aerial photography.

Based on 1983 population projections found in the 1984 publication, Profiles: North Carolina Counties, Currituck County had a density at that time of 43.9 persons per square mile. Large farms and timber tracts account for the majority of land acreage with most of the residential, commercial and institutional uses being located along the County's major and minor thoroughfares. The Ponderosa Trailer Court, located on the south side of 158 has experienced substantial growth since 1979 when the initial land use survey was conducted. Specifically, the mobile home park has gone from 32 units in 1979 to 109 units in late 1984, which has more than tripled the number of trailers in this park over a five year period. Walnut Island, as shown on the Powells Point N.E. quad sheet has experienced a substantial reduction in single-wide trailers and a large increase in double-wide trailers. Since 1979, the outer banks has grown from approximately 166 dwelling units in 1977 to over 514 dwelling units in 1984 based on a comparison of aerial photographs of this area taken in 1977 and 1984. This area will continue to experience growth primarily due to the recent opening of a public road to serve the southern portion of the outer banks.

b. Significant Land Use Compatibility Problems

1. During the public information meetings and during planning work sessions, it has become apparent that soil mining in the county has the potential of creating tracts of land unsuitable for future use if not properly monitored during soil removal. Since this problem has been discussed at some length, the County has established new policies to correct the problem.

2. Strip development occurring along the County's major thoroughfare has a long-range potential to create turning movement problems for drivers passing through the County.

3. The scattering of mobile homes throughout the County during the past several years makes the effort to control and direct mobile home and other growth more difficult. The County, in an effort to better guide this type of development, has established specific policies to address this issue.

c. Problems from Unplanned Development

The new Town section of Moyock was developed many years ago in an area that was unsuitable for residential use because of soil characeristics and flat topography. In 1984, the County applied for CDBG funds to address these problems, but was not successful in receiving funds. In late 1984, the County sanitarian reviewed the problems and determined that a central sewer system would be needed to properly resolve conditions in this area. Because of low densities in this section of the County, a central sewer system would not be economically feasible. Therefore, occupants will continue to have problems with septic tanks and some privies until a central sewer system can be installed economically.

Mobile home parks throughout the County that were developed prior to establishment of development guidelines have continued to be a problem with inadequate lot sizes, inadequate street systems, and water and sewer systems. Although these problems developed many years ago in some cases, the County continues to work to resolve these problems where they can. Development at the northern section of the outer banks with no public access other than driving on beach to reach this area continues to be a problem.

d. Areas Likely to Experience Major Land Use Changes

Three areas along the 158/168 highway corridor are likely to experience major land use changes during the 10 year planning period. The area between Moyock and the Virginia line is currently a mixture of agriculture, residential and scattered commercial uses. A large residential development is presently being planned in the Moyock area which, in combination with other existing faci-

lities, will encourage the continued commercial development along the highway corridor which is now zoned to permit commercial development. The second area likey to experience major land uses changes is located at both ends of the new Coinjock Bridge which is presently under construction. This area is also presently zoned to permit commercial development. The third area is located along 158/168 at Point Harbor between the Wright Memorial Bridge and State Road 1112 north of Harbinger. Again, this area is presently zoned for commercial development and is presently experiencing spillover development from the Dare beaches.

Along the outer banks, Ocean Sands and Whalehead Club and any lands south of Corolla not presently subdivided will probably experience substantial changes due to the recently opened public road from the Dare beaches to Corolla.

4. Current Plans, Policies and Regulations

a) Summary of Existing Plans and Policies Impacting Land Use

Local Plans

1980 CAMA Land Use Plan: The plan prepared by Coastal Consultants, Ltd., provided information on land use, population, economic conditions, policies and a land classification map based on CAMA guidelines.

1976 CAMA Land Use Plan: This plan was prepared to meet State regulations of the 1974 Coastal Area Management Act. The plan included background material and analysis, and identified land use issues.

1981 Outer Banks Access Environmental Impact Statement: This plan outlined alternative methods for access to the outer banks and environmental impacts of each method. Since this study was completed, the NCDOT has opened an existing road to public use from Dare County to Corolla.

State Transportation Improvement Plan: This plan calls for the construction of a new bridge at Coinjock which is now under construction. The plan also calls for the widening of 158/168 from Barco to Point Harbor, a portion of which is under construction at the present time.

1973 Community Facilities Plan: This plan contains an inventory and analysis of existing community facilities and makes estimates of future needs based on population projections. The Division of School Planning is presently updating information on future facility needs for the school system, and this information

should be available in July, 1985. Based on preliminary information from Mr. Spencer, it appears that the County will need to expand some facilities while constructing new facilities in other areas during the 10-year planning period based on anticipated growth of the school-age population.

Statewide Comprehensive Outdoor Recreation Plan: SCORP is a state-wide plan prepared to analyze existing supply of and demand for recreation facilities in the State. Analysis is by region with Currituck being located in Region R.

1984 Hazard Analysis Plan: The purpose of this plan is to provide information on major potential hazards affecting the area, to develop a plan of action to protect the population from those potential hazards, and to provide an emergency management plan in the event of a natural or man-made emergency.

1983 Emergency Management and Evacuation Plan: The purpose of this plan is to provide an orderly and systematic means to handle emergency aid and evacuation for County and non-resident population in the event of an emergency. The plan was helpful in identifying man-made hazard areas such as fuel storage areas and other potentially dangerous substances.

Local Regulations and Policies

1984 Multi-Family Ordinance Amendment: This amendment was approved in early 1985 and permits multi-family development in the RA-40 and A-40 zone. This amendment was prepared and approved as an outgrowth of the 1984-85 CAMA Land Use Planning Process.

1977 Off Road Policy as amended in 1985: The ordinance deals with the operation of power-driven vehicles on the Outer Banks Barrier Strand. This ordinance was amended following the opening of a public road to Corolla.

1984 Flood Damage Prevention Ordinance: This ordinance established regulations controlling the public and private losses to property due to flood conditions in specific areas of the County. Federal Flood Insurance maps became available in November, 1984, which show the Zone A 100-year Flood Hazard Areas. The County is now participating in the Federal Flood Insurance Program.

1984 Subdivision Regulations: These regulations govern the arrangement of lots and streets in new subdivision, and provide guidelines for the provision of improvements. During the CAMA Land Use Planning Process, this regulation was reviewed, and several recommendations for change were discussed and incorporated into the policy section of this plan.

1984 Zoning Ordinance: All of Currituck County is covered by the ordinance. The ordinance regulates land use, building heights, setbacks, etc., based on several land use zoning categories. Again, this ordinance has been carefully reviewed during this Land Use Planning Process and several recommendations for change have been incorporated into the policy section of this plan.

Building Permits: The County has adopted the State Building Code and enforces the Code through the services of a full-time building inspector.

Septic Tanks Permits: Septic tank permits are required by the County before on-lot sewage disposal systems can be used.

Federal and State Regulations: State and Federal permits and regulations as administered by applicable agencies.

Studies

1983 Currituck County Outer Banks Carrying Capacity Study: This study analyzed five factors dealing with the capacity to absorb growth on the Outer Banks. Suitability of land for development, possible need for hurricane evacuation, road network for access, wastewater treatment and drinking water supply.

1983 North Carolina Anadromous Fisheries Management Program: This report identifies spawning areas of Alewife and Blueback Herring in the Currituck Sound area.

1984 Impact of Salinity Introductions upon Fish Habitat in Currituck Sound: This study discusses the impact on commercial and sport fishing in Currituck Sound and the impact on fresh and salt water fish species if salt water were introduced into Currituck Sound by inlets in the Outer Banks.

Enforcement of Existing Local Ordinances

The zoning and subdivision regulations are enforced by the County Zoning Officer, Planning Board and County Board of Commissioners.

The Flood Insurance Program and Building Code enforcement are enforced by the County Building Inspection Department.

Septic tank review and approval is administered by the County Sanitarian based on State Health Regulations and local application and approval procedures.

The Dune Protection Ordinance is enforced by the County Sheriff's Department.

Currituck County does not have a designated historic district or regulations.

Currituck County does not have a nuisance ordinance, sedimentation ordinance or environmental impact ordinance.

5. Constraints: Land Suitability

The primary purpose of this section is to determine the general suitability of undeveloped land, giving consideration to physical limitations, fragile areas and areas with resource potential. This information and analysis will be used in preparation of the Land Classification Map.

a. Physical Limitations for Development

1. Man-Made Hazards. As indicated earlier in this plan, the County, as part of its Emergency Management and Evacuation Plan, has identified several areas of the County where potentially hazardous material is used or stored.

Potential Hazard Areas by Township

Moyock Township:

H. & W. Plastics, Fiberglass Plant
Currituck Grain, Inc., Farm
J. J. Flora Grain, Inc., Farm
Norfolk & Southern Railroad
Poyner Oil Company, Inc., Petroleum (Fuel)

Crawford Township:

Central Fertilizer, Inc., Farm
Patrick & Forbes Grain, Inc., Farm
Roberts Brothers, Inc., Farm
M. A. Guard Oil Co., Petroleum (Fuel)
Intercoastal Waterway, Misc.
Exxon Marina, Petroleum
Harrison's Texaco Marina, Petroleum Fuel

Poplar Branch Township:

Exxon, Coast Oil Co., Inc., Petroleum
Doxol Gas (Bottle Gas, Compressed Gas)
Bruce & Co., Fiberglass Plant

In addition to these facilities, the County has a public airstrip located at Maple, North Carolina, at State Road 1244 and US 158. The County proposes to use a portion of this property for industrial development, which has the potential of introducing other man-made hazards or substances into the County, depending on the type of industry that might locate in this area.

2. Natural Hazards

a. Flood Hazard Area

In November, 1984, the detailed Flood Insurance Program maps for Currituck County showing the 100-year Flood Area became available. The Flood Hazard Map shows the location of the "A" Zone 100-year flood. Any future development in this area would be required to meet standards established by the County Building Inspector as required by the County Flood Insurance Program. The detailed flood insurance maps are available to the public upon request.

b. Soil Limitations

In 1982, a detailed soil survey for Currituck County was issued. This valuable information was not available for the 1980 Land Use Plan. The survey addresses building site development and sanitary facility characteristics ranging from slight to severe.

Tables X and XI reflect the severity of the problem for each desired condition by soil type. For example, the Corolla soil type would have severe problems for shallow excavation for the foundation of a house, while the Wando soil would have a slight restriction for excavation of a foundation wall. Table XI shows slight restrictions for a septic tank in the Conetoe soil with a severe restriction in the Augusta soil because of wetness. In an effort not to duplicate information already available in the County, we have not included the detailed soils maps in this report, however Tables X and XI are part of that detailed soils report and do reflect the restrictions placed on each soil type by proposed activity.

TABLE X.--BUILDING SITE DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
AaA--Altavista	Severe: wetness, cutbanks cave.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
At--Augusta	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: low strength, wetness.	Moderate: wetness.
BN: Beaches.						
Newhan	Severe: cutbanks cave.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: droughty.
BoA--Bojac	Severe: cutbanks cave.	Slight	Moderate: wetness.	Slight	Slight	Moderate: droughty.
Ca--Cape Fear	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness.	Severe: wetness.
Cb--Conaby	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, excess humus.
CnA--Conetoe	Severe: cutbanks cave.	Slight	Slight	Slight	Slight	Moderate: droughty.
CoB--Corolla	Severe: cutbanks cave, wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Moderate: flooding, wetness.	Severe: droughty.
CrB: Corolla	Severe: cutbanks cave, wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Moderate: flooding, wetness.	Severe: droughty.
Duckston	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding.	Severe: droughty, flooding.
Cu--Currituck	Severe: cutbanks cave, excess humus, wetness.	Severe: flooding, wetness, low strength.	Severe: flooding, wetness.	Severe: flooding, wetness, low strength.	Severe: flooding, wetness.	Severe: wetness, flooding, excess humus.
Da--Dare	Severe: excess humus, wetness.	Severe: flooding, wetness, low strength.	Severe: flooding, wetness.	Severe: flooding, wetness, low strength.	Severe: wetness, low strength.	Severe: excess humus, wetness.
Do--Dorovan	Severe: excess humus, wetness.	Severe: flooding, wetness, low strength.	Severe: flooding, wetness.	Severe: flooding, wetness, low strength.	Severe: flooding, wetness.	Severe: wetness, flooding, excess humus.
Ds--Dragston	Severe: wetness, cutbanks cave.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, droughty.
Dt--Duckston	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding.	Severe: droughty, flooding.
Du. Dune land						

TABLE X.--BUILDING SITE DEVELOPMENT--continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
DwD: Dune land.						
Newhan	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: droughty, slope.
Mu Munden	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
NeC Newhan	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Severe: droughty.
NhC: Newhan	Severe: cutbanks cave.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: droughty.
Corolla	Severe: cutbanks cave, wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Moderate: flooding, wetness.	Severe: droughty.
No Nimmo	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Os Osier	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
OuB Ousley	Severe: cutbanks cave, wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.	Severe: droughty, flooding.
Pa Pasquotank	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
Po Ponzer	Severe: excess humus, wetness.	Severe: flooding, wetness, low strength.	Severe: flooding, wetness.	Severe: flooding, wetness, low strength.	Severe: wetness, low strength.	Severe: wetness, excess humus.
Pt Portsmouth	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.
Ro Roanoke	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
StA State	Severe: cutbanks cave.	Slight	Moderate: wetness.	Slight	Moderate: low strength.	Slight.
StB State	Severe: cutbanks cave.	Slight	Moderate: wetness.	Moderate: slope.	Moderate: low strength.	Slight.
To Tomotley	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Ud. Udorthents						
Wa Wahee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength, wetness.	Severe: wetness.
WnB Wando	Severe: cutbanks cave.	Slight	Slight	Slight	Slight	Moderate: droughty.

TABLE X.--BUILDING SITE DEVELOPMENT--continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
Ws---------- Wasda	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, excess humus.

TABLE XI.--SANITARY FACILITIES

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," "good," "fair," and other terms. Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
AbA---------- Altavista	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: wetness.
At---------- Augusta	Severe: wetness.	Severe: wetness.	Severe: wetness, seepage.	Severe: wetness.	Fair: wetness.
BH*: Beaches.					
Newhan----------	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
BoA---------- Bojac	Moderate: wetness.	Severe: seepage.	Severe: wetness, seepage.	Severe: seepage.	Fair: thin layer.
Ca---------- Cape Fear	Severe: wetness, percs slowly.	Severe: seepage, flooding, wetness.	Severe: wetness, too clayey.	Severe: seepage, wetness.	Poor: too clayey, hard to pack, wetness.
Cb---------- Conaby	Severe: wetness.	Severe: seepage, flooding, excess humus.	Severe: seepage, wetness.	Severe: seepage, wetness.	Poor: wetness, thin layer.
CnA---------- Conetoe	Slight----------	Severe: seepage.	Severe: seepage.	Severe: seepage.	Poor: seepage.
CoB---------- Corolla	Severe: wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: wetness, seepage.	Severe: seepage, wetness.	Poor: seepage, too sandy.
CrB*: Corolla----------	Severe: wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: wetness, seepage.	Severe: seepage, wetness.	Poor: seepage, too sandy.
Duckston----------	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, wetness, too sandy.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.
Cu---------- Currituck	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, excess humus.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.
Da---------- Dare	Severe: wetness, percs slowly.	Severe: flooding, excess humus, wetness.	Severe: seepage, wetness, excess humus.	Severe: wetness.	Poor: excess humus, wetness.
Do---------- Dorovan	Severe: flooding, wetness, poor filter.	Severe: flooding, excess humus, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness.	Poor: wetness, excess humus.

See footnote at end of table.

TABLE XI.--SANITARY FACILITIES--continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
Ds Dragston	Severe: wetness, poor filter.	Severe: wetness, seepage.	Severe: wetness, seepage.	Severe: wetness, seepage.	Poor: wetness, thin layer.
Dt Duckston	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, wetness, too sandy.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.
Du*. Dune land					
DwD*: Dune land.					
Newhan	Severe: poor filter, slope.	Severe: seepage.	Severe: slope, too sandy.	Severe: seepage, slope.	Poor: seepage, too sandy, slope.
Mu Munden	Severe: wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Fair: wetness, thin layer.
NeC Newhan	Severe: poor filter.	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: seepage, too sandy.
NhC*: Newhan	Severe: poor filter.	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: seepage, too sandy.
Corolla	Severe: wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: wetness, seepage.	Severe: seepage, wetness.	Poor: seepage, too sandy.
No Nimmo	Severe: wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Poor: wetness, thin layer.
Os Osier	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.
OuB Ousley	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy.
Pa Pasquotank	Severe: wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Severe: wetness.	Poor: wetness.
Po Ponzer	Severe: wetness, percs slowly.	Severe: flooding, excess humus, wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Pt Portsmouth	Severe: wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.

See footnote at end of table.

TABLE XI.--SANITARY FACILITIES--continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
Ro---------- Roanoke	Severe: flooding, percs slowly, wetness.	Severe: flooding.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: hard to pack, too clayey, wetness.
StA, StB---------- State	Moderate: wetness.	Severe: seepage.	Severe: seepage, wetness.	Moderate: wetness.	Fair: too clayey, thin layer.
To---------- Tomotley	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Ud*. Udorthents					
Wa---------- Wahee	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
WnB---------- Wando	Severe: poor filter.	Severe: seepage.	Severe: seepage.	Severe: seepage.	Poor: seepage.
Ws---------- Wasda	Severe: wetness.	Severe: flooding, excess humus, wetness.	Severe: wetness, seepage.	Severe: wetness.	Poor: wetness, excess humus.

* See description of the map unit for composition and behavior characteristics of the map unit.

c. Water Supply

During 1984 and 1985, Currituck County officials have given citizens the opportunity to sign up for the proposed County water system. As this plan is being prepared, the County does not have the necessary users to make the system financially feasible, and County citizens continue to use private wells for water supply with Universal Park and Ocean Sands on the Outer Banks having a central water system. The 1980 Land Use Plan covered the issue of water supply very comprehensively based on earlier studies done by Moore, Gardner and Associates, Inc., River and Associates and information furnished by DNRCD, Office of Water Resources. Since this information and conditions remain applicable, we have incorporated this data into this 1985 update.

"Groundwater System[1]

Surficial clay, sand, and gravel deposits of post-Miocene Age extend over the entire County. The surficial deposits range in thickness from about 30 feet in the northern part to about 110 feet along the North River in the southern part of the county. Sand ridges are conspicuous topography features.

The surficial deposits are underlain throughout the county by the upper Miocene Yorktown formation. This formation consists of clays, sands, shells and limestones. The Yorktown formation generally increases in thickness progressively in the direction of its stratigraphic dip to the southeast. The Miocene units thicken from about 660 feet in the western part of the County to more than 800 feet at Church Island. Miocene sediments are underlain uncomformably throughout the County by the Beaufort Formation of the Paleocene Age.

The water level in the surficial sands in generally 1/2 foot to 8 1/2 feet below the land surface. North of Aydlett, water from the water table aquifer discharges directly into Currituck Sound from a peat bed at the base of the cliff formed by the Aydlett "Narrow Shore Ridge."

Water in the Yorktown upper and lower aquifers occurs under artesian conditions. (Water under some pressure) The surface of the Yorktown upper aquifer ranges from about 15 feet in the northwestern part of the County to about 5-10 feet along most of the Pungo-Powells Point Ridge to mean sea level along the sounds and major rivers. This surface is slightly below mean sea level in the pumping area of

[1]Moore, Gardner and Associates, Inc. Report on Currituck County Comprehensive Study as to Population, Economy and Water and Sewerage Requirements to 1990. 1970.

influence in the cone of depression near Moyock. It is about 9-14 feet below the surface at Point Harbor. Annual fluctuations of water levels in the Yorktown upper aquifer are not nearly as large as in the overlying water table aquifer. The surface of the groundwater aquifer is highest in September-October and lowest in March-May.

Aquifers

Potable water is obtained from the water table aquifer and the Yorktown aquifer throughout the County. However the Yorktown lower aquifer is utilized for domestic water supplies only in the southern part of the County. Surficial sands of the water table aquifer furnish more water to the County, than any other aquifer. Wells range in depth from 3 to 40 feet, and yield from 2 to 10 gpm.

Quality of Groundwater

In Currituck County, fresh ground water can be obtained in most areas from the water table aquifer and the Yorktown upper aquifer and in some areas the Yorktown lower aquifer. Much of this water contains objectionable amounts of iron or hardness-causing constituents, but water which is satisfactory for most purposes is available in a few localities.

Water Table Aquifer

The water table aquifer generally contains the least mineralized water in Currituck County. Sums of dissolved mineral constituents vary from about 35 to 1,000 ppm, but most water tables contain less than 500 ppm total dissolve solids. Chloride concentrations in the aquifer range from 4.5 to 316 ppm, and are less than 100 ppm except in some areas adjacent to the brackish rivers and sounds. Iron ranges from .05 to 15 ppm. Hardness as calcium carbonate ranges from 8 to 621 ppm. Many water table wells yield water which is classified as soft. These soft waters are from localized sandy zones than contain little shell material and no real pattern of distribution can be established for them.

Yorktown Upper Aquifer

The chemical quality of the ground water in the upper Yorktown aquifer in Currituck County is not uniform. Sums of dissolved mineral constituents ranged from 187 to 1,620 ppm. Chloride concentrations range from 12 to 818 ppm. Iron ranges from .01 to 6.4 ppm. Hardness as calcium coarbonate ranged from 78 to 524.

Yorktown Lower Aquifer

Few wells are known to produce water from the Yorktown Lower Aquifer in Currituck County. Fresh water can be obtained from this aquifer throughout most of the County.

Beaufort Aquifers

No wells are known to produce water from the Beaufort aquifers in Currituck County. It is believed that there is no possibility of obtaining fresh water from these water-bearing zones.

Surficial water is not available in sufficient quantities to be considered a source of supply in Currituck County. At the present time, the cost of treating brackish water such as the North River or Currituck Sound remain high. ($1.00 to $2.00 per 1000 gallons)[2]

Potable water is obtainable from the water table aquifer and the Yorktown aquifer throughout the County.[3] The aquifer at Shawboro appears to be the best source for a proposed County water supply system, since sufficient quantity is available, as well as relatively low chlorides. Test wells show that the chloride content of water from deep wells lessens from the north part of the County to the south.[4] Most private wells in the County rely on the surficial aquifer. Since densities remain low in the County, and yearly rainfall about 50 inches per year, surficial aquifer recharge is generally sufficient for private wells. However, due to the use of shallow wells, groundwater contamination from on-lot sewage disposal systems is a problem, especially in denser areas. In growing areas such as Moyock and Grandy, a public water system will probably be required in the next ten to twenty years.

The figure on page 22, "Relation of the Water Table to Physiographic Features," indicates areas on the Currituck

[2] River and Associates, Greenville, NC
[3] Moore, Gardner and Associates, p. 13
[4] DNRCD, Office of Water Resources

Beach Barrier Spit as having 7.4 and 8.5 feet water table above mean sea level. Their locations are possible sources of water table well fields.[5]

The surficial aquifer on the Currituck Banks is recharged by rainfall. It is estimated that precipitation in excess of potential evapotranspiration losses results in about 20 inches of surplus water. Because runoff is negligible, all of this water is used to charge the groundwater system. The amount of recharge is considerable if one considers the theoretical amount of water the rainfall represents. Twenty inches of recharge, falling over the 9000 acres of the Banks is about 5 billion gallons or on a daily average, about 14 million gpd. The recharge water is, however, relatively thinly layered. Extensive horizontal collectors are required to obtain sufficient pumping for more than single units systems. The Ocean Sands development, utilizing horizontal collectors has been shown to pump over 200 gpm for a 24 hour period.[6] The major problem in using the shallow well horizontal system is the potential which exists for contamination from on-lot sewage disposal systems or other contaminants such as from an oil spill or other chemical material entering the surface aquifer. Such systems are only feasible if large amounts of space are left open for groundwater recharge and prevention of contamination.

Wells drilled deep (100-300 ft.) by the North Carolina Office of Water Resources have shown availability of water in large quantities in the Duck area. Chloride contents are high, ranging from 680 ppm at 120 ft. to 4000 ppm at 300 ft. The maximum standard for chlorides is 250 ppm. Under certain development circumstances, potable water can be obtained from desalination of such water.[7] (Ocracoke, for example has such a system, but costs are high at $2.00 per gallon).

Subsequent to completion of the 1980 Land Use Plan, several additional reports have been completed that address the unique conditions found on the outer banks as they relate to water supply and future development. First, in 1981, the Outer Banks Access Environmental Impact Statement prepared by Eco/Sciences Environmental Group of Vienna, Virginia was completed. Although the primary purpose of the study was to address alternative methods of access to the outer banks, the study did briefly address water supply and its impact on permitting or restricting future development in this area. On page 113 of the report is discussed the fact that if complete use of all lots presently on the market was implemented, it would generate population levels

[5] Moore, Gardner and Associates, Figure 5.
[6] DNRCD. Office of Water Resources
[7] DNRCD. Office of Water Resources

of 14,000 north of Corolla, and 21,000 south of Corolla. This buildout population on lots already on the market would be well above levels which can be reasonably assumed to be safety served by the only known water supply source, the surficial aquifer. As also pointed out in the study, this aquifer is a thin freshwater lens which lies above saltwater and use of this aquifer beyond its recharge capacity will result in saltwater intrusion and destruction of dune vegetation. The study further stated on Page 113 that in the opinion of the U. S. Geological Survey (USGS) team studying groundwater aquifers in North Carolina, no deep aquifers exist below the Currituck outer banks (Walder, 1980). A March, 1984, Water and Sewer Study, prepared by McDowell and Associates, P.A. seems to confirm that fresh water exists above saline water. Specifically, Exhibit W-3, Section 1.4.4 C, Tables XII, XIII, and XIV indicated that chloride concentration and specific conductance increase with depth. This suggests that fresh water beneath Whalehead Beach sits atop saline water. This fresh water lens has formed as a result of rainfall recharge at the surface and is buoyed by the density difference between fresh and salt water.

The study further indicates that the most serious potential impact at Whalehead Beach and potentially other areas of the outer banks is the possibility that saline water lying beneath the fresh-water lens will upcone into the water supply. One type of water supply that minimizes the possibility of upconing of salt water in a thin aquifer is the infiltration gallery. This type of supply reduces the impact of withdrawals by spreading it over a much greater area than does a vertical well. An infiltration gallery is the recommended source of water supply at Whalehead Beach to minimize the potential of upconing.

PREPARED FOR

COASTAL ZONE RESOURCES

TITLE

LOCATIONS OF
TEST HOLES
WHALEHEAD BEACH
Currituck County, North Carolina

COMPILED BY J. Roland	Geraghty & Miller, Inc.	DATE Sept. 1983
DRAWN BY P.O. Smith	West Palm Beach, Florida	REVISED
CHECKED BY T.L. Tessler	SCALE As Shown	FIGURE 1

Source: 1984 Water & Sewer Capacity Study of Ocean Sands by McDowell and Associates, P.A.

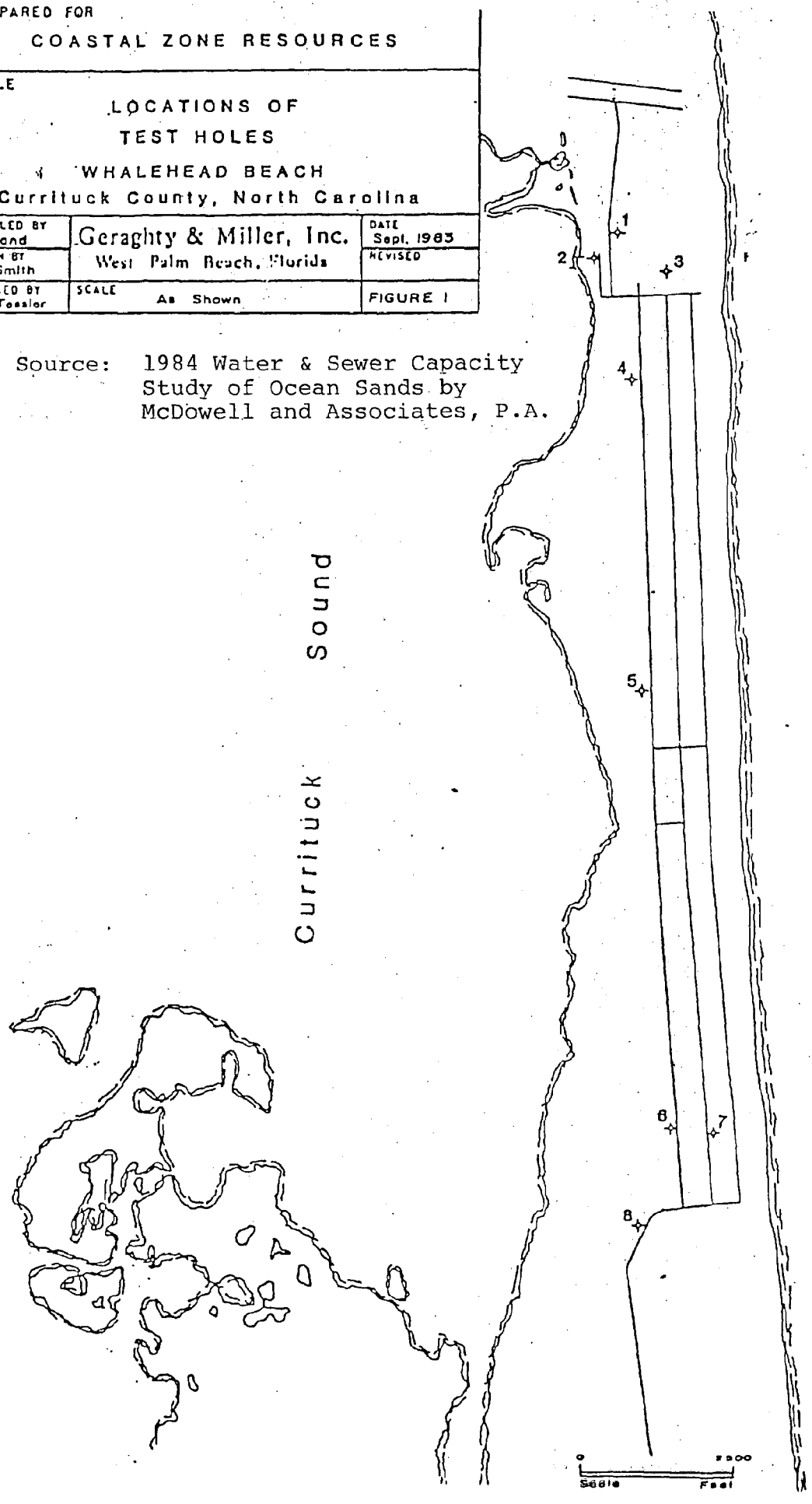


TABLE XII

CONSTRUCTION DETAILS OF
MONITORING WELLS
WHALEHEAD BEACH,
CURRITUCK COUNTY, NORTH CAROLINA

Well *	Approximate Land Surface Elevation **	Total Drilled Depth ***	Screened Interval ***
Well 1d	+9.0	168	75 - 85
Well 1d	+9.0	50	45 - 50
Well 1wt	+9.0	12	7 - 12
Well 2	5.25	60	17 - 22
Well 3	11.0	63	12 - 17
Well 4	25.0	63	14 - 19
Well 5s	18.0	63	58 - 63
Well 5wt	18.0	24	19 - 24
Well 6s	16	83	70 - 75
Well 6wt	16	22	17 - 22
Well 7s	9.0	63	41 - 46
Well 7wt	9.0	23	18 - 23
Well 8s	10.0	63	50 - 55
Well 8wt	10.0	23	18 - 23

* All wells are similarly constructed of 1.25-inch-diameter PVC casing and 1.25-inch-diameter, 0.008-inch slot screens.

** Estimated from topographic map provided by Coastal Zone Resources.

*** Reported as depth below land surface, in feet.

Source: 1984 Water & Sewer Capacity Study of Ocean Sands by McDowell and Associates, P.A.

TABLE XIII

RESULTS OF RECOVERY TESTS
WHALEHEAD BEACH,
CURRITUCK COUNTY, NORTH CAROLINA

Well	Screened Interval *	Pumping Rate **	Apparent Transmissivity ***
Well 1wt	7 - 12	28	1,300
Well 1s	45 - 50	8.2	6,000
Well 1d	75 - 85	7.5	2,000
Well 2s	30 - 35	15	3,300
Well 3wt	12 - 17	60	160,000
Well 4wt	14 - 19	25	38,000
Well 5wt	19 - 24	30	40,000
Well 5s	58 - 63		
Well 6s	17 - 22	10	7,100
Well 7wt	18 - 23	30	17,000
Well 7s	41 - 46	12	21,000
Well 8wt	19 - 24	13	3,600
Well 8s	50 - 55	8.3	11,000

* Reported as depth below land surface, in feet.
** Reported as gallons per minute.
*** Reported as gallons per day per foot.

Source: 1984 Water and Sewer Study of Ocean Sands by McDowell and Associates, P.A.

TABLE XIV

WATER QUALITY FROM TESTED WELLS
AND SURFACE WATER
WHALEHEAD BEACH,
CURRITUCK COUNTY, NORTH CAROLINA

Well	Screened Interval *	Approximate Static Water Level Elevation **	Chloride Concentration ***	Specific Conductance ****
Well 1wt	7 - 12	+3.97	66	360
Well 1s	45 - 50	+1.18	940	4,200
Well 1d	75 - 85	+0.40	11,000	8,000
Well 2s	30 - 35	1.24	66	480
test depth	20 - 25	ND	180	875
Well 3wt	12 - 17	6.84	60	420
test depth	20 - 25	ND	120	600
Well 4wt	14 - 19	11.29	22	240
Well 5wt	19 - 24	9.61	37	140
Well 5s	58 - 63	4.60	330	2,200
Well 6wt	17 - 22	6.54	30	130
test depth	70 - 75	ND	3,600	8,000
Well 7wt	18 - 23	2.31	120	400
Well 7s	41 - 46	2.26	120	360
Well 8wt	19 - 24	3.94	23	160
Well 8s	50 - 55	4.08	150	450
Currituck Sound	water surface	ND	970	5,500

* Reported as depth in feet below land surface.
** Referenced to estimate of topographic elevation.
*** Reported as milligrams per liter.
**** Reported as micromhos per centimeter.
ND means "not determined".

Source: 1984 Water and Sewer Capacity Study of Ocean Sands by McDowell and Associates, P.A.

TABLE XV

SCHEMATIC DIAGRAM OF UNDERLYING AQUIFERS

(in cross section)

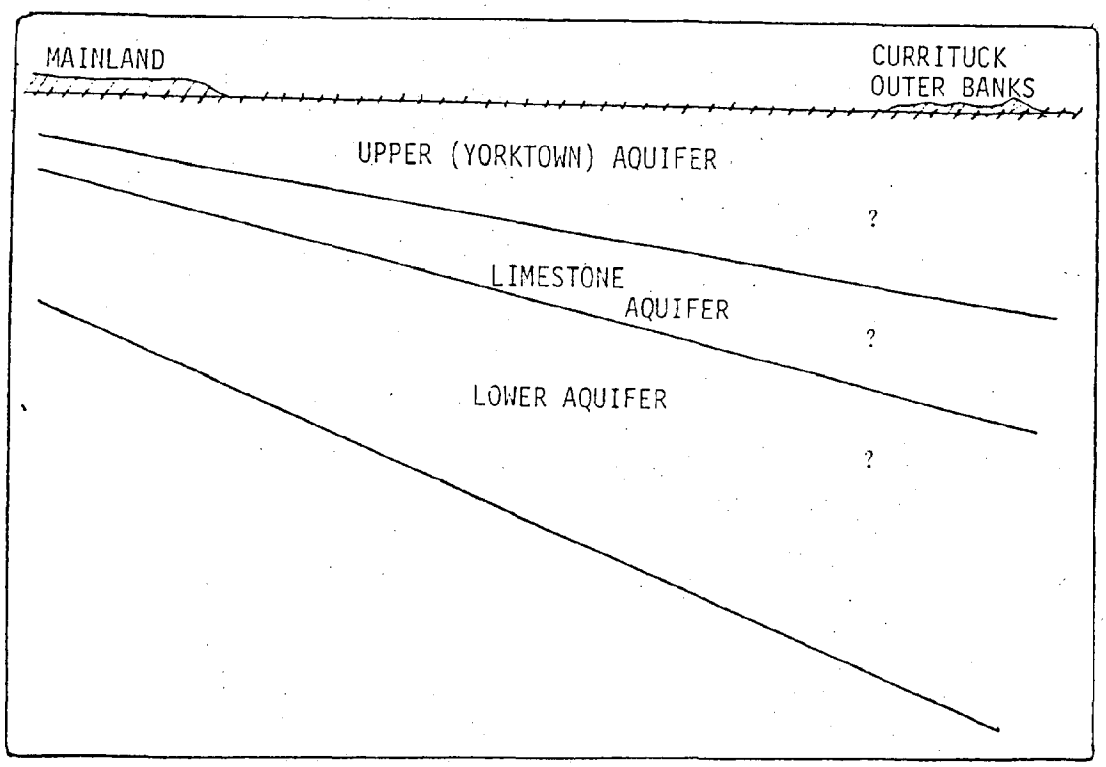
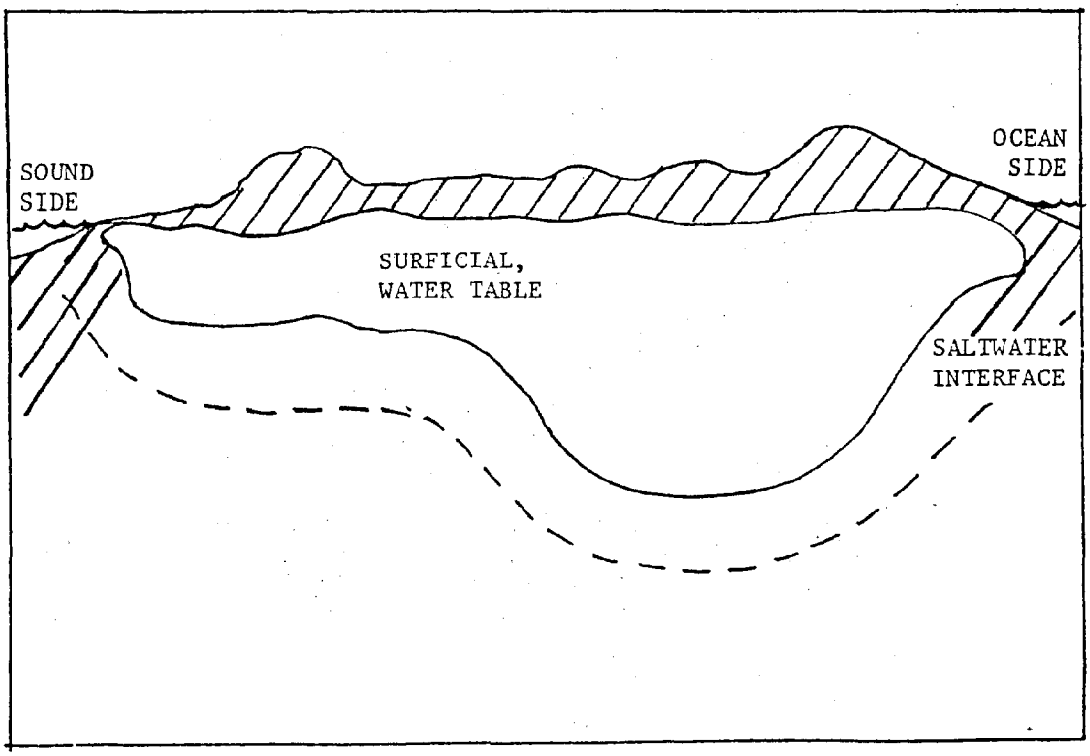


TABLE XVI

SCHEMATIC DIAGRAM OF WATER TABLE AQUIFER

(in cross section)



Source: 1983 Carrying Capacity Study, Currituck Outer Banks by Dept. of City and Regional Planning, UNC Chapel Hill

Note: the shape of the lens varies with location on the

The Carrying Capacity Study for the Currituck County outer banks prepared in 1983 by the Department of City and Regional Planning, University of North Carolina at Chapel Hill also concluded on page 59 of the report that the surficial, or water table, aquifer as shown in Tables XV and XVI occurs as a lens-shaped body overlying saltwater. It is pointed out in the study that this aquifer supplies water to all wells drilled on the Currituck outer banks.

Obviously, with the recently opened public road to the southern portion of the outer banks and the development pressure this event will surely bring, it is apparent that water supply is a critical issue that must be addressed. The County is well aware of this potential problem and has begun the process of addressing this complex issue.

D. Slope Exceeding 12 Percent

Like other coastal counties, Currituck's topography is flat; however, in several areas such as Waterlily, there are steep slopes along the Currituck Sound.

6. Fragile Areas

These are areas which could easily be damaged or destroyed by inappropriate or poorly planned development. There are several fragile areas in Currituck County including those areas identified as Areas of Environmental Concern (AECs), including coastal wetlands, estuarine waters, public trust waters, and ocean hazards areas. Other areas considered fragile, but not designated as AECs, are sand dunes along the outer banks, complex natural areas and areas that sustain remnant species.

A. Coastal Wetlands

Coastal wetlands or marshlands are defined as any salt marsh or other marsh subject to regular or occasional flooding by tides, including wind tides (whether or not the tide waters reach the marshland areas through natural or artificial watercourses), provided this shall not include hurricane or tropical storm tides. Coastal wetlands in Currituck County are located in Currituck Sound and along the western side of the Currituck outer banks. A substantial amount of wetlands exist on the west side of Mackey Island and are part of the Mackay Island National Wildlife refuge. A substantial amount of wetlands existing between Church Island and the intercoastal waterway at Coinjock as well as along both sides of North West River at Tull Bay and along the North River.

B. Estuarine Waters and Estuarine Shorelines

Estuarine waters are defined in G. S. 113A-113(b)(2) as "all the water of the Atlantic Ocean within the boundary of North Caro-

lina and all the waters of the bays, sounds, rivers, and tributaries thereto seaward of the dividing line between coastal fishing waters and inland fishing waters, as set forth in an agreement adopted by the Wildlife Resources Commission and the Department of Natural Resources and Community Development filed with the Secretary of State, entitled "Boundary Lines, North Carolina Commercial Fishing -- Inland Fishing Waters," revised to March 1, 1965."

Estuarine shorelines are those non-ocean shorelines which are especially vulnerable to erosion, flooding, or other adverse effects of wind and water and are intimately connected to the estuary. This area extends from the mean high water level or normal water level along the estuaries, sounds, bays, and brackish waters as set forth in an agreement adopted by the Wildlife Resources Commission and the Department of Natural Resources and Community Development, for a distance of 75 feet landward.

As an AEC, Estuarine shorelines, although characterized as dry land, are considered a component of the estuarine system because of the close association with the adjacent estuarine waters. Estuarine waters and adjacent estuarine shorelines make up the most significant components of the estuarine system in Currituck County. The significance of the estuarine system is that it is one of the most productive natural environments of North Carolina. It not only supports valuable commercial and sports fisheries, but is also utilized for commercial navigation, recreation and aesthetic purposes. Species dependent upon estuaries include menhaden shrimp, flounder, oysters and crabs. These species make up over 90 percent of the total value of North Carolina's commercial catch. These species must spend all or part of their life cycle in the estuary. The preservation and protection of these areas are vitally important. The estuarine waters and adjacent estuarine shorelines are vast in Currituck County, as noted in the 1980 Plan Update, and includes the following:

As discussed in the 1980 Land Use Plan, Currituck Sound is a very unique environment with its marsh areas serving as a critical link in the Atlanta Flyway, providing food for migratory water fowl.

The area is fed by the Northwest and North Rivers, numerous drainage ditches and by Virginia Back Bay. It is worth noting that both macrophytes (such as milfoil) and phytoplankton have been noted in numerous locations. The addition of nutrients from wastewater effluents to the waters of these areas could cause the growth to be accelerated and in some cases, water quality standard contraventions (for chlorophyl a for instance) may be predicted.

The Sound is not affected by lunar tides, is very shallow and low in salinity which all together make it vulnerable to external influences such as dredging, agricultural drainage and residential and commercial drainage since adequate flows are not present to flush the Sound periodically. As discussed in the 1980 LUP, this unique Sound was at one time saline in character prior to the

1800's, but since has become a fresh water body since the closing of the Currituck Banks in the 1800's. As referred to earlier in this Plan, a study was completed in 1984 which analyzed the impact of introducing salinity back into the Sound. The policy section will address this issue and reflect the position of local officials.

C. Public Trust Waters

Public Trust Waters are partially defined as all waters of the Atlantic Ocean and the lands thereunder from the mean high water mark to the seaward limit of state jurisdiction; all natural bodies of water subject to measurable lunar tides and lands thereunder to the mean high mark; all navigable natural bodies of water and lands thereunder to the mean high water level or mean water level, as the case may be. In other words, public trust areas are waters and adjacent lands, the use of which benefits and belongs to the public. Public Trust Waters in Currituck County include Currituck Sound, Northwest River, North River and Albemarle Sound.

Currently, all development and development-related activities within the designated AECs in Currituck County are regulated by the CAMA permit process and are guided.

D. Sand Dunes Along the Outer Banks

Sand dunes are barren, partly vegetated deposits of windblown sand. Although the largest, so-called barrier dunes occur immediately inland from the ocean beach, dunelands (lands influenced by windblown sand deposition) extend from the inland base of the barrier dunes to the line of estuarine water on the Sound side. Dunes and dunelands comprise a major portion of the outer banks and barrier islands and constitute a protective barrier between the ocean and the sounds, marshes and mainland. Although dunes and dunelands are found along the entire coast, the largest dunes occur in Dare and Currituck Counties.

E. Complex Natural Areas

Complex natural areas are lands that support native plant and animal communities and provide habitat conditions or characteristics that have remained essentially unchanged by human activity. Such areas are surrounded by landscapes that have been modified but that do not drastically alter the conditions within the natural areas or their scientific or educational value.

Complex natural areas provide the few remaining examples of conditions that existed within the coastal area prior to settlement by Western man. Often these natural areas provide habitat conditions suitable for rare or endangered species or they support plant and animal communities representative of pre-settlement conditions. These areas help provide an historical perspective to

changing natural conditions in the coastal area and together are important and irreplaceable scientific and educational resources.

In a broad but real sense, most of Currituck County is a complex natural area: the vast expanse of water, the outer banks, the wetlands, Coastal wetlands (fresh marshes) are discussed elsewhere in this report: this section deals with two other wetland types, bogs and wooded swamps. A close relationship exists between these lands and the areas that sustain remnant species (discussed below) for the swamps and bogs are the preferred -- indeed, necessary -- habitat for many rare and endangered plant and animal species.

Bog land, nearly 14,000 acres of it, occurs in the northwest corner of the County and extends into Camden County. Nomenclature is confusing for the bog is known as the Dismal Swamp (wooded swamps are discussed below). Bog land is the result of poor drainage. Large areas of the Dismal Swamp are higher in elevation than the surrounding land, but the high water retention capabilities of the soil and the lack of sufficient drainageways have acted to create the wetland. Bog soils are usually moist to water-logged and are often flooded in the winter. Over time, bogs become overlaid with a layer of organic soil formed by decaying plants and plant materials. It is not uncommon for fallen trees to become embedded in the muck. With proper drainage, bog land can be converted to fertile farm land, although the range of suitability for crops is somewhat limited. Some tracts of bog in Currituck are being drained and converted to farm land or to more extensive use as timber land. Principal tree species include pond pine and loblolly pine. It is probable that much of the existing bog land in the County will be used for one of these two purposes in the future. Bog used for timber land under intensive management could still provide refuge for the big game, deer and bear, found in the County. However, bog converted to agricultural use would have less value for wildlife purposes: in fact, it would be deleterious to certain wildlife communities, particularly deer and bear.

Wooded swamps in the County cover approximately 22,000 acres in the low lying areas bordering the streams and water courses. The largest swamp areas adjoin the North River. They are often flooded, especially in the winter, by more than a foot of water. These areas tend to dry up during the growing seasons, when growing plants greatly increase the demand for the available water. The dense shade of trees (gum, cypress, and oak) growing in the swamps restricts the growth of aquatic plants that serve as food for ducks and muskrats. Because swamps lie in what is usually termed flood plain areas, they have very little potential usefulness as agricultural lands. They serve as refuge areas for a variety of wildlife and are excellent areas for growing certain types of timber. Modern engineering practices make it possible to fill swamps and convert such land to other uses, but the expense is very great and there is little demand for filling swamp land.

Currituck will probably retain its swamp land intact for many years to come. In time, it is probable that swamps will be managed much more extensively for timber purposes than they have been in the past. The land will continue to provide refuge for wildlife in keeping with its present function. More intensive forest management is not likely to decrease the value of swamps for wildlife. With some planning, proper forestry practices could actually enhance their usefulness as refuge areas.

F. Areas That Sustain Remnant Species

Areas that sustain remnant species are those places that support native plants or animals, rare or endangered, within the coastal area. Such places provide habitat conditions necessary for the survival of existing populations or communities of rare or endangered species within the County.

The continued survival of certain native plants and animals in the coastal area that are now rare or endangered cannot be assured unless the relatively few well defined areas providing necessary habitat conditions are protected from development or land uses that might alter these conditions. These habitats and the species they support are a valuable educational and scientific resource.

The Mackey Island National Wildlife Refuge, Monkey Island Track and Swan Island Track and Audubon Society - Pine Island Sanctuary on the outer banks are considered identified areas that sustain and support native plants and animals.

G. Ocean Beaches and Shorelines

As indicated in the 1980 Currituck Land Use Plan, ocean and estuarine beaches and shorelines occur along the entire coast. These are land areas without vegetation, consisting of unconsolidated soil material that extends landward from the mean low tide to a point where vegetation occurs or there is a distinct change in predominant soil particle size or there is a change in slope or elevation which alters the physiographic land form, and thus constitutes the transition into dunes or wetlands.

The Outer Banks portion of Currituck County is a slim, elongated peninsula jutting southward from Virginia Beach into Dare County. Slightly less than 8800 acres in area, they are 23 miles long and range in width from less than 2,000 feet to more than one mile. Approximately 6,000 years old, the banks were the product of wind and sand and water. Theories concerning their origin vary. They may have been born when a mainland ridge was surrounded by rising sea levels. It is possible that they were generated by the elongation of a coastal sand split. Another possibility is that they were formed by the gradual rise of an offshore bar.

However, it is clear that they evolved into a shifting string of barrier islands.

The Currituck Banks are composed of highly mobile sand particles. Constantly eroded and redeposited by the forces of wind and moving water, the particles form a matrix of shifting beaches, dunes, sand hills, plains, and wetlands. Though the strand's mean elevation is only six feet above sea level, a number of the migrating hills tower 75 feet above their surroundings. Inlets have periodically pierced Currituck's length, only to be reclosed by sands setting from longshore currents. Still evident on the banks is oceanic overwash, a process which drives them slowly landward. Vegetation is the stabilizing element in this dynamic environment. Grasses, shrubs, and scrub forest tracts capture the migrating sands, and the plants' root systems stabilize the porous soils, reinforcing dune systems. The plants' distribution is governed by wind exposure, water supply, and the sands nutrient supply and salt content.

H. Unique Geological Formations

Penny's Ridge is the only unique geological formation located on the Outer Banks of Currituck.

I. Registered Natural Landmarks

No known registered natural landmarks in Currituck County.

J. Scenic and Prominent High Points

Penny's Ridge, which is located on the Outer Banks of Currituck, is considered to be the second tallest sand due on the east coast of the United States.

K. Archaeologic Sites/Historic Sites

Historic and archaeologic sites information was obtained from the 1980 LUP and updated information from the Division of Archives and History. As of October, 1985, Currituck County has a total of 38 known archaeological sites with 22 being entered into the State Computer inventory. Since the 1980 list was prepared three additional sites have been added. Specifically, Culong on SR 1147, Baum site and Whalehead Club sites have been added since 1980.

INVENTORY OF HISTORIC SITES

Name of Identity of Site	Location Township	Highway	Description of Site
Twin Houses	Crawford	Shawboro, NC 168	No known date. Two identical frame houses which are joined by a hallway.

INVENTORY OF HISTORIC SITES (Cont'd.)

Name of Identity of Site	Location Township	Highway	Description of Site
Forbes House	Crawford	Shawboro Vicinity, NC 168	ca. 1920. Two story house with a gable roof and a shed porch around three sides.
Currituck County Jail	Crawford	Currituck Courthouse NC 34	ca. 1766. An early jail.
Pilmore Methodist Church	Crawford	Currituck Courthouse NC 34	1928. On the site of the first Methodist sermon delivered in North Carolina in 1722.
Swan Island Club	Fruitville	Currituck Sound	Old Sportsman Club
Indian Town Academy	Crawford	Indian Town Vicinity	Undeveloped site.
Ballance Site	Crawford	Bell Island SR 1245	Undeveloped archaeological site found projectile points and stone axes.
Goose Site	Poplar Branch	Gray Vicinity SR 1245 Church's Island	Undeveloped archaeological sites found to be possible site of large Indian village.
McKnight Shipyard	Crawford	Indian Creek-North River	Undeveloped. 1st in North Carolina.
Waterlily Site	Poplar Branch	E. Shore of Currituck Pen.	Undeveloped archaeological site.

INVENTORY OF HISTORIC SITES (Cont'd.)

Name of Identity of Site	Location Township	Highway	Description of Site
Currituck Beach Lighthouse	Poplar Branch	Corolla Outer Banks	1875. A brick tower 158 feet tall. Built to fill a dangerous gap between Cape Henry to the north and Bodie Island to the south.
Currituck Shooting Club	Poplar Branch	Currituck Sound, Outer Banks	Private Sportsman Club, 1870.
Caffey's Inlet Lifesaving & Life Boat Station	Poplar Branch	Duck vicinity Outer Banks	ca. 1890. An excellent prototype of stations built in the period.
Whaley Site	Poplar Branch	Albemarle Sound	Undeveloped archaeological site.
Harbinger Site	Poplar Branch	1/3 mile sq. an SW shore of Currituck Pen.	Undeveloped archaeological site.
Sampson Point Site	Poplar Branch	Sampson Point vicinity US 158	Undeveloped archaeological site.
Wright Brothers Memorial Bridge Site	Poplar Branch	US 158	Located at the western terminus of the bridge. Undeveloped archaeological site.
Baum Site			Location & Published
Culong	Shawboro Area		Also called Thomas Cooper Ferebee House
Whalehead Club	Corolla Area		

Source: 1980 LUP which used reprint from An Appraisal of Potential Outdoor Recreation, Currituck County, NC, SCS, USDA, Currituck, N. C., 1973 and information provided by Division of Archives & History dated October 16, 1985.

7. Areas With Resource Potential

A. Productive and Unique Agricultural Land

In August, 1983, the Governor of North Carolina issued a formal policy declaration (Executive Order 96) concerning the State's desire to promote the "Conservation of Prime Agricultural and Forest Lands" in support of and to assist with compliance of the Federal Farmland Protection Policy Act of 1980. The declaration of Executive Order 96 recognized the fact that in many areas of the State, prime agricultural and forest lands were defined as those lands" . . which possess the best combination of physical and chemical characteristics for producing food, feed, fiber (including forest products), forage, oilseed, and other agricultural products (including livestock), without intolerable soil erosion."

The Governor directed the Secretary of the State Department of Natural Resources and Community Development to assume the responsibility of carrying out the order. The program proposed in the Executive Order involved the identification of and mapping of prime agricultural and forest lands by the Soil and Water Conservation Commission through the assistance of local soil and Water Conservation Districts. Also, by means of the existing State Clearinghouse review process, the impact of any development proposed on prime agricultural or forest lands would have to be assessed beginning January 1, 1984.

The recently completed details soils map for Currituck County had a special section on prime farmland and identified specific soils that should be included.

B. Publicly Owned Forests, Parks, etc.

The 7,000-acre Mackay Island National Wildlife Refuge is located on Knott's Island in the Currituck Sound. It is owned and operated by the Bureau of Sports and Fisheries and Wildlife of the U. S. Department of the Interior.

The North Carolina Wildlife Resources Commission operates the North River and Northwest River Wildlife Management Areas on leased land. These occupy several thousand acres of land. The Commission also operates two water access (boat launching) areas; one near Corolla on the sound side of the outer banks; the other at Coinjock. Also, the Swan Island Tract and Monkey Island Tract on the Outer Banks have been set aside for protection.

There are several commercial camping grounds in the County and numerous duck blinds.

The County itself operates no recreation facilities other than those which are part of its public school property. There are public and private boat access and recreation areas available in the County (See Appendix "A" at back of plan).

C. Prime Farmland Identified Consistent with Governor's Executive Order Number 96.

The soil survey report for Currituck County was completed in August, 1982, and included a section identifying prime farmland. Specifically, the report stated that 10,362 acres or nearly 6% of Currituck meets the soil requirements for prime farmland. Soils included are Altavista fine sandy loam, Bojac loamy sand, Munden loamy sand and State fine sandy loam.

D. Valuable Mineral Sites

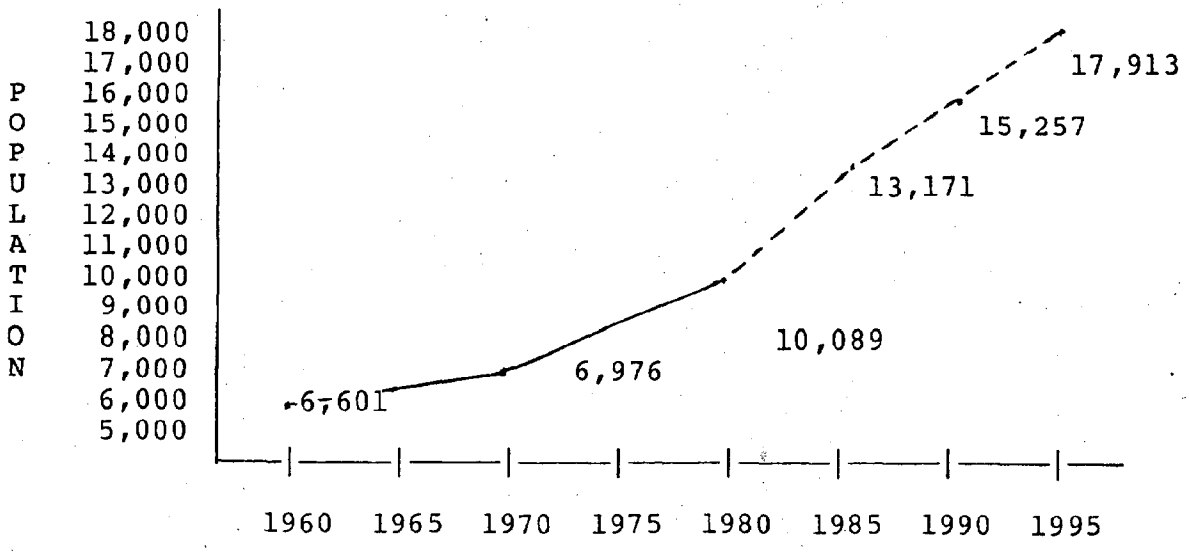
As discussed in the 1980 Land Use Plan, the mineral resources of Currituck County are few. Small quantities of titanium oxide, used in paint manufacture occur along the shore of the Currituck and Albemarle Sounds. Because of their small quantity and low grade, they have not attracted commercial interests.

There are large quantities of peat in the Dismal Swamp area; however, based on recent experiences in Hyde and Tyrrell County, this resource does not appear economically feasible to mine.

The County has been experiencing the removal of soil materials for use in other areas. This mining activity is a County concern and is discussed in more detail in the policy section of this plan.

8. Estimated Demand

A. Population and Economy



Source: North Carolina Department of Administration

As discussed earlier, Currituck County experienced a 59% population increase between the 1970 and 1980 census. As the graph above shows, this accelerated growth rate is projected to continue during the ten year planning period. Also, discussed in the first section of this plan is the fact that much of this anticipated growth may continue to be in the younger age groups if 1970-1980 trends continue, which will impact on schools, roads and other public services and facilities.

Seasonal population projection information was not available from the Department of Administration. As discussed in earlier sections, several campground facilities exist on the mainland and generate a seasonal influx of visitors to the County of approximately 1,000 additional people per weekend during June through August. Based on the size and present utilization of these facilities, we do not anticipate a significant increase in seasonal population from these facilities. The primary source of future increases in seasonal population will come from vacation homes presently in place on the outer banks and potential new homes that may be constructed on the outer banks during the 10 year planning period. As discussed earlier, from 1977 to 1984, the outer banks grew from 166 d.u. to 514 in late 1984. Based on May 24, 1985 Building Inspection Department information, the outer banks has experienced the following growth rate since January, 1983.

Date	Outer Banks Construction Permits
1983	63
1984	99
January-March, 1985	34
April, 1985	7
Through May 24, 1985	8
Total Units to Date in 1985	49

Using current construction trends for 1985 and previous activity in 1983 and 1984, we have estimated the following seasonal population growth during the planning period.

1983	63	Actual Permits
1984	99	Actual Permits
1985	100	Estimated Permits
	262	

Three factors will primarily affect seasonal population growth on the outer banks. Improved road access to Whalehead Beach and Corolla, adequate supplies of water and federal tax policy, now being discussed that would cap deductions for second homes at $5,000 annually. If this proposed tax reform measure is approved, it could impact on vacation home development during this

10 year planning period. For estimating purposes, we have used an estimated 100 units per year for the 10 year planning period which would create 1,000 d.u. of which 90% or 900 would be vacation homes. Using the 4.5 people as discussed in an earlier section, this would generate an additional seasonal population on the outer banks of approximately 4,050 people during the vacation season by the end of this 10 year planning period.

Several of the approved PUD's on the outer banks presently have been approved for commercial development. This commercial development approval permits hotel and motel development based on the current zoning ordinance. At present, there is no reasonable way to project when and if such devlopment will take place during the 10 year planning period; however, if it should, it will obviously add additional seasonal population.

B. Future Land Needs

By 1990, it is estimated that the County will have a population of 15,257 people and 17,913 by 1995. This projection represents a population increase of 4,842 more people in the County by the end of this ten year planning period. Using 2.8 people per household, this population increase represents approximately 1,729 more dwelling units by 1995. The County zoning ordinance presently requires 40,000 square feet of lot for every dwelling unit constructed in the County. This translates to approximately 1,587 more acres of land in residential use by 1995. With the County's low density of aproximately 43 persons per square mile, this projected population increase should be easily accommodated. A recently approved amendment to the County Zoning Ordinance will permit multi-family housing and could substantially reduce the projected acreage required for residential use if multi-family housing is found to be an acceptable housing alternative.

C. Community Facilities Needs

1. Schools

The Division of School Planning is finalizing recommendations for the school board on future school expansion needs. Tentative information from Mr. Spencer of this office shows that school population is expected to grow during the planning period.

	K-5	6-8	9-12	Total
84-85	1,119	587	595	2,301
88-89	1,348	590	651	2,589
93-94	*	720	827	*

*Information not available

Source: Division of School Planning

Recommendations for school expansion have not been finalized, but school population is expected to grow and decisions will need to be made concerning replacement, relocation or construction of facilities.

2. Police/Fire Protection

Fire protection is provided on a voluntary basis and considered adequate for future growth. Police protection is also adequate with the possible exception of the outer banks and night patrols on the mainland. During community information meetings on the outer banks, citizens expressed concern about police protection and the need for more officers in the area. This concern has been expressed following the road opening to Corolla and easier access by the public to an area that has been difficult to reach. The County should give consideration to increasing patrols in this area as the area continues to grow and increased staff during evening hours to provide more than one officer on duty at night.

3. Roads

The 158/168 thoroughfare is presently being improved and should be adequate during the 10 year planning period.

4. Water/Sewer

The County continues to work toward the goal of establishing a County water system. Until that system is in place, individual wells should be adequate to serve individual needs. Ocean Sands water system should be adequate during the planning period.

Because of low density development in the County, citizens will continue to utilize septic tanks for sewage disposal. The County should continue to encourage nodal development to make providing an economical sewage treatment facility as density in nodal areas such as Moyock, Grandy, Corolla or Point Harbor increase. As population and density increases, it will become more and more important that this type of facility be provided to protect ground water and adjacent estuarine water and fish habitat.

9. Resource Protection: Estuarine System

1. Areas of Environmental Concern: Currituck County recognizes the primary concern of the Coastal Resources Commission, in terms of protecting resources, as managing Areas of Environmental Concern (AECs). The County also shares this concern for the protection and sound management of these environmentally sensitive lands and waters. The AECs which occur in Currituck County were identified on Page 33 of this Plan. In terms of developing policies, the Estuarine System AECs, which include Coastal Wetlands, estuar-

ine Waters, Estuarine Shorelines, and Public Trust areas, will be treated as one uniform grouping since they are so closely interrelated. Another reason for grouping these AECs together is the fact that the effective use of maps to detail exact on-ground location of a particular area, sometimes pose serious limitations.

Currituck County's overall policy and management objective for the Estuarine System is "to give the highest priority to their protection and perpetuate their biological, social, economic, and aesthetic values and to ensure that development occurring within these AECs is compatible with natural characteristics so as to minimize the likelihood of significant loss of private property and public resources." (15 NCAC 7H. 0203) In accordance with this overall objective, Currituck County will permit those land uses which conform to the general use standards of the North Carolina Administrative Code (15 NCAC 7H) for development within the Estuarine System. Generally, only those uses which are water dependent will be permitted. Specifically, each of the AECs within the Estuarine System is discussed below.

a. Coastal Wetlands

The coastal wetlands or "marsh" in Currituck County, as discussed on Page 33 and shown on the wetland map, are located mainly on the western side of the Outer Banks and along the North River, and a substantial amount is present at Mackey Island. Also, a substantial amount of wetlands exists between Church Island and the Intracoastal Waterway at Coinjock. The first priority of uses of land in these areas should be the allowance of uses which promote "conservation" of the sensitive areas, with conservation meaning the lack of imposition of irreversible damage to the wetlands. Generally, uses which require water access and uses such as utility easements, fishing piers and docks, will be allowed, but must adhere to use standards of the Coastal Area Management Act (CAMA: 15 NCAC 7H).

b. Estuarine Waters and Estuarine Shorelines

The importance of the estuarine waters and adjacent estuarine shorelines in Currituck County was discussed on pages 33 and 34 of this document. Although there are no "hazardous" estuarine shorelines in Currituck County subject to severe erosion, the County is very much aware that protection of the estuarine waters and adjacent estuarine shorelines is of paramount importance to fishing, both commercially and for recreation. Currituck County recognizes that certain actions within the estuarine shoreline, which is defined as the area extending 75 feet landward of the mean high waterline of the estuarine waters, could possibly have a substantial effect upon the quality of these waters.

In order to promote the quality of the estuarine waters, Currituck County will permit only those uses which are compatible with both the estuarine shorelines and which protect the values of the estuarine system. Residential, recreational, and commercial uses may be permitted within the estuarine shoreline, provided that:

1. A substantial change of pollution occurring from the development does not exist;
2. Development does not have a significant adverse impact on estuarine resources;
3. Development does not significantly interfere with existing public rights or access to, or use of, navigable waters or public resources.

c. Public Trust Areas

Currituck County recognizes that the public has certain established rights to certain land and water areas. (For definitions and geographic locations of public trust areas, see Page 35 of this Plan). These public areas also support valuable commercial aesthetic value. Currituck County will continue to promote the conservation and management of public trust areas. Appropriate uses include those which protect public rights for navigation and recreation and uses permitted under CAMA regulations.

d. Areas of Environmental Concern: Ocean Hazards Areas

Oceans Hazards Areas of Environmental Concern are the second broad category of AECs occurring in Currituck County. These are areas along the Atlantic Ocean shoreline which have a special vulnerability to erosion or other adverse effects of sand, wind, and water. Because of this vulnerability, improperly managed growth and development could expose life and property to unreasonable levels of danger. The Ocean Hazards in Currituck County include the ocean erodible area, and the high hazard flood area. However, in the conventional sense of "hazards," the only Ocean Hazards area is the high hazard flood areas, or "V" zones, i.e. high velocity areas identified on Flood Insurance Rate Maps.

As discussed in the Federal Emergency Management Agency Flood Insurance Study for Currituck County, the U. S. Army Corps of Engineers has established the 3-foot breaking wave as the criterion for identifying coastal high hazard zones. This was based on

a study of wave action effects on structures. This criterion has been adopted by the Federal Emergency Management Agency for the determination of V Zones. Because of the additional hazards associated with high-energy waves, the National Flood Insurance Program regulations require much more stringent floodplain management measures in these areas, such as elevating structures on piles or piers. In addition, insurance rates in V Zones are higher than those in A Zones with similar numerical designations.

The location of the V Zone is determined by the 3-foot breaking wave as discussed previously. The detailed analysis of wave heights performed in the flood insurance study allowed a much more accurate location of the V Zone to be established. The V Zone generally extends inland to the point where the 100-year flood depth is insufficient to support a 3-foot breaking wave.

For both the ocean erodible and high hazard flood area, development of any type is prohibited or tightly controlled by existing regulations and enforcement provisions. It is the susceptibility to change from the constant forces of waves, wind, and water upon the normally unstable sands that form the shore, which causes these areas to be considered "hazardous." These forces are magnified during storms and can cause significant changes in bordering land forms (such as dunes and beaches), as well as to any structures located on them. It is the flexibility of these land forms (dunes and beaches), however, which also lends protection from the magnified energies of wind and water as a first line of defense for development located behind them. The important, basic and essential function of the beach and dunes is their capacity for storing sand, serving to absorb and thereby dissipate the initial impact of excessive wind and waves.

Currituck County policy, as it relates to the Ocean Hazard areas, is to enforce the CAMA regulations as they pertain to this area through the Currituck County CAMA Permit Officer. The provisions of the Flood Insurance Program to manage this area, is enforced by the County Building inspector and the management procedure will continue to be County policy as it relates to Ocean Hazards Areas.

e. Constraints to Development

Soils

As discussed in the Natural Hazards section of the Plan, Currituck's 1984 Detailed Soil Survey discusses soil types found in Currituck and the severity of problems for different land uses. This soils report has also identified prime farmland. Current policy is to allow the County Health Department to regulate the approval of septic tanks based on State regulations and this will continue to be County policy. As mentioned earlier, the report identified prime farmland; however, local officials question the rational for the selection of prime farmland and do not wish to establish local policy to regulate the use or development of prime farmland.

f. Flood Prone Areas

As discussed in an earlier section of this Plan, Currituck received the detailed Flood Insurance Program maps in November, 1984. County policy is that all future development shall meet the requirements of the County Flood Insurance Program as administered by the County Building Inspector.

g. Local Resource Development Issues

Of primary concern to Currituck County citizens is the proper utilization and protection of the Currituck Sound and the Outer Banks. Each of these issues has been addressed under the Commercial and Recreational Fisheries, Public Access to the Banks and Commercial Development on the Outer Banks Policy Section.

h. Hurricane and Flood Evacuation Needs and Plans

This area will be treated in a separate section of this Land Use Plan, which will include policy statements on hurricane and flood evacuation as well as storm mitigation and post disaster recovery policies.

i. Protection of Potable Water Supplies

As stated in the discussion on ground water resources, above ground development poses no immediate threat to the water supply with reduced densities now required on future PUD's and with low density development on the Currituck mainland.

j. Use of Package Treatment Plants

Currituck County policy is to require package treatment plants of all PUD developments. Other developments utilize septic tanks as aproval by the Health Department. This policy will continue

during the planning period unless conditions warrant change in policy.

k. Stormwater Runoff

Currituck County shares the concern of the State Division of Environmental Management (DEM) that stormwater runoff from urbanized areas may be contributing to declining surface water quality in some areas. Maintenance of water quality is of utmost concern to Currituck County. The County recognizes the value of water quality maintenance both in terms of protecting commercial and recreational fishing resources and providing clean water for other recreational purposes.

Currituck policy related to stormwater runoff has been included under Commercial and Recreational Fisheries policy.

l. Marina and Floating Home Development

The County zoning officer has received and reviewed an ordinance dealing with Marina and Floating Home Development as it relates to New Hanover County. To date, this type of development has not taken place in Currituck and present CAMA regulations as they relate to marinas and AECs would regulate this type of development. The County Planning Board will review this ordinance and make a recommendation to the Currituck County Board of Commissioners. Currituck County policy to deal with this issue will be formulated after this study by the Planning Board and County Commissioners.

m. Industrial Impacts of Fragile Areas

The Moyock Lumber Company property is located adjacent to the Moyock Run and runoff from this facility go directly into Moyock Run which feeds into the Northwest River. Specific adverse impacts are not known, but there may be potential adverse impacts on fragile areas.

n. Development of Sound and Estuarine System Islands

The County does not wish to control island development other than through zoning/existing CAMA and federal regulations.

o. Maritime Forests

Mr. David H. Rackley, Acting Field Supervisor of the U. S. Department of the Interior, Fish and Wildlife Service, indicated that some maritime forests do exist on the Outer Banks of Currituck, but not of significant size such as that found at Nags Head Woods and Bogue Banks. Plant species such as Red Maple, Black Willow, Wax Myrtle, and Live Oak are present and do provide high value wildlife habitat for migrating birds; however, not of high quality or quantity. Many areas of shrub thickets do exist

and efforts should be made to identify, map, and establish guidelines to protect these areas as they develop.

Commercial Forest Lands

As discussed in the 1980 Land Use Plan, over one-half of the total land area in Currituck County is in forest and wooded wetlands. In colonial times, longleaf pine in the County was commercially valuable for pitch and turpentine. When these trees were harvested, second and third growth trees of less value took their place. Generally, commercial forestland has been decreasing in the County due to clearing for agricultural use. The clearing has occurred at a rate of about 1 to 2% per year. The clearing has generally occurred on the Currituck Peninsula along major routes. In 1980, the County had about 75,000 acres of forest land with 66,469 acres in 1984 based on the 1984 Forest Statistics for the Northern Coastal Plain of North Carolina. About 73% is in private ownership, about 15% in commercial ownership, and the remaining in governmental ownership. For commercial production, most of the wood harvested is soft wood such as yellow pine for saw timber, and soft hardwoods (maple, gum) for veneer plywood.

Regarding commercial forestry operation, the County considered the following alternatives: (1) adopt a severance tax on harvesting, (2) adopt strict regulations regarding draining of land sand placement of spoil, (3) adopting an ordinance providing for reclamation and replanting of cleared areas.

Selected Policy: The County supports the various County, State, and Federal programs for managing forest resources.

Peat and Phosphate Mining

Currituck County does not have any known phosphate mining potential and a policy is not required at this time.

As discussed earlier, although Currituck does have large quantities of peat, it does not appear economically feasible to mine at the present time or in the near future. If peat mining does become feasible in Currituck, County officials will review and establish policy at that time.

Off-Road Vehicle

Currituck County adopted an Off-Road Ordinance for the Outer Banks on July 18, 1977. The ordinance was amended on April 1, 1985 and restricts off-road vehicles on the Outer Banks as specified in the ordinance. This ordinance shall remain the local policy of Currituck County until amended.

Assistance to Channel Maintenance and Beach Renourishment

Proper maintenance of channels, particularly the Atlantic Intra-Coastal waterway, is very important to Currituck County because of the impact of commercial and recreational fisheries and general boating. Currently, Currituck County does not provide direct assistance to the Corps by helping to obtain or provide spoil sites. The Corps of Engineers appear to have adequate spoil easements in Currituck County; however, the County will provide indirect assistance, as requested, and if feasible, aid in channel maintenance.

Currituck County would welcome assistance from the U. S. Army Corps of Engineers in the event beach renourishment is required in the future.

Energy Facility Siting and Development

At present, Currituck County is not aware of any plans to construct an energy facility in the County. County policy to deal with such a facility will be formulated if such a facility is proposed. Current zoning ordinance requirements would dictate the siting of such a facility.

10. Goals, Objectives and Local Land Use Policies

A. Mobile Homes (Background)

In 1976, the Land Use Plan stated that 26% of housing stock for Currituck County were mobile homes. The plan at that time established a goal that no additional mobile home parks be developed and existing parks not be permitted to expand. In the 1980 Land Use Plan, mobile homes were still a concern and the plan recommended, and the County implemented a change in the zoning ordinance which required that all new lots platted for mobile homes contain at least 40,000 sq. ft. These two policies, no additional mobile home parks (1976 Plan), and one-acre lots for mobile homes (1980 Plan), have not had any appreciable affect on slowing the influx of mobile homes into the County.

Based on a meeting with the Chesapeake, Virginia Planning Director, we confirmed that much of this mobile home growth during the last several years has come about because of Chesapeake's stringent mobile home regulations, causing families to locate in Currituck County where controls are not as tight. Since that meeting, the County Planning Board and County Board of Commissioners have reviewed and approved a change to the zoning ordinance which permits multi-family housing which is a positive outgrowth of the 1985 land use planning process.

Issue: Continued Growth of Mobile Homes as Part of Currituck County Housing Stock

a. Issue - The use of mobile homes for housing has continued to increase through utilization of lots previously approved in existing mobile home parks and subdivisions. Also, the County has seen an increase in scattered single lot mobile homes since the zoning requirement was passed following the 1980 Land Use Plan.

b. Goals and Objectives - In an effort to regulate growth in the County and specifically the location of mobile homes, the County has restricted mobile homes on single 40,000 sq. ft. lots to the RA-40 district. This zoning change has permitted the scattering of mobile homes in this zoning district and could create the very conditions the County was trying to avoid in both the 1976 and 1980 Land Use Plan by restricting the use of mobile homes in the County. The primary goal of the County is to permit the use of mobile homes and at the same time, control their location. The County also wishes to provide opportunities for other forms of housing such as multi-family housing.

c. Policy and Implementation Options Considered

1. Do nothing and continue to permit mobile homes on scattered sites in the RA-40 Zone.

2. Prepare and adopt a mobile home park and mobile home subdivision ordinance that requires a high standard of quality such as underground electric service, paved streets, parking and landscape buffers. Determine appropriate zones where mobile home parks and subdivisions would be permitted in as a conditional use.

3. Require that all future mobile homes locate in mobile home parks and subdivisions as permitted by a revised zoning ordinance.

4. Revise zoning ordinance to permit multi-family housing as a conditional use in the RA-40 Zone or other zones the County determines appropriate.

5. Rezone the large area presently zoned RA-40 on the eastern side of Knotts Island to eliminate the availability of so much land for mobile home development in close proximity to tidewater Virginia.

d. Policy and Implementation Strategy Selected - All future mobile homes shall locate in mobile home parks and subdivisions as permitted by revised zoning ordinance.

Revise zoning ordinance to permit multi-family housing as a conditional use in the RA-40 and A-40 zones. Revise zoning ordinance to permit mobile home parks and mobile home subdivisions in designated areas and as a conditional use (Multi-family housing has been implemented during this planning process).

B. One-Half Acre Lots (Background)

Based on the 1980 Land Use Plan, the County Zoning Ordinance was revised to require a minimum of 40,000 square feet for residential development. Since that time, several citizens in the County have expressed a concern that this minimum requirement has eliminated the possibility of a small land owner deeding property to family members. Based on public information meetings held throughout the County during the month of October, it was made very apparent that the majority of those attending the meetings wanted to maintain this 40,000 square foot minimum lot size. However, local officials are sensitive to the desire of small property owners to permit family owners to build or locate an additional dwelling unit on a 1/2 acre lot adjacent to their property.

Issue: One-Half Acre Lots

a. Should the County create a special zone in which 1/2 acre lots are permitted.

b. Goals and Objectives - The County is sensitive to problems created for small land owners that wish to provide a small lot for family members. Requiring lots of 40,000 square feet each has been established based on County soil conditions, access to a water supply, and considering the wide use of septic tanks for sewage disposal. Requiring lot sizes that are adequate to accommodate future growth using septic tanks and individual wells or the County water system when constructed is the primary goal of the County.

c. Policy and Implementation Options Considered

1. Leave minimum lot requirement at 40,000 square feet.

2. Permit residential infill districts that allow one-half acre lots in designated areas.

3. Designate the following areas as residential infill districts: Wilson Town, Sawyer Town, New Town and Oldes Hill.

4. The zoning ordinance shall be revised to permit one-half acre lots if individual to use one-half acre is a direct family member and joint septic tank use or individual septic tank use is approved by the County Sanitarian.

d. Policy and Implementation Strategy Selected - After much discussion and consideration of this issue, the County determined that the current policy requiring a minimum 40,000 square foot lot for future development is the most appropriate policy considering County soil conditions and the extensive use of septic tanks for sewage disposal. However, the County Planning Board and County Board of Commissioners will continue to study the possible designation of infill districts that permit 1/2-acre lots as a conditional use.

C. Topsoil Mining (Background)

During public information meetings, County officials confirmed that numerous soil mining operations are taking place throughout the County. Currently all mining operations one acre or larger require a state mining permit. However, mining operations of less than one acre do not require a permit or reclamation plan. County officials are concerned that a natural resource, topsoil, is being lost at an increasing rate with minimum control at the State level due to lack of adequate State personnel to monitor this activity.

Issue: Topsoil Mining

a. Only mining operations of one acre or more require a permit and reclamation plan. Although the State requires a permit for mining of one acre or more, they do not require that the permit be posted making it difficult for County officials to know if mining operations are approved or not.

b. Goals and Objectives - In an effort to better regulate mining operations in the County, County officials will establish local regulations to control future mining operations.

c. Policy and Implementation Options Considered

1. Allow State to continue monitoring mining operations using current system.

2. Allow State to continue present monitoring of mining operations of one acre or more and amend present County ordinance to require posting of permit on site and filing of reclamation plan with County.

3. Establish standards for mining operations in conditional use section of zoning ordinance. Establish a time limit for completion of reclamation following completion of mining operation.

d. Policy and Implementation Strategy Selected - State will continue present monitoring and County will amend present County ordinance to require posting of permit on site and filing of reclamation plan with County. The County will amend current ordinances to establish specific standards for mining operations.

D. Economic/Industrial Development (Background)

Currituck has been and remains a very rural County with many area residents traveling outside the County for employment opportunities. The 1976 LUP recommended that efforts be made in cooperation with the State to develop the Maple Airport site for industrial development. The 1980 LUP recommended that efforts be made to encourage the location of small industries in the County which do not pollute the water and air, but could capitalize on the available work force in the County. In an effort to take maximum advantage of the airport property, the County wishes to improve the facility with lighting and other improvements to meet present and anticipated aviation needs. Availability of safe and adequate airfield facilities could enhance the County's efforts to expand the industrial base of Currituck.

Issue: Economic/Industrial Development

a. Issue - Providing job opportunities for County citizens while protecting the environmental integrity of the County is a primary concern of County officials. Encouraging some industrial development will help increase the County tax base.

b. Goals and Objectives - The County would like to expand the existing tax base to provide job opportunities for County citizens. The County established a goal in the 1980 Land Use Plan to encourage industrial development. This plan provides specific recommendations to implement the continued goal of encouraging industrial development.

c. Policy and Implementation Options Considered

1. Do nothing and allow many of the County's citizens to continue travelling outside Currituck for job opportunities.

2. Work with the State's Industrial Development Section to encourage the utilization of the Maple Airport site for development as an industrial park and upgrade existing airport facilities.

3. Establish an Industrial Development Committee to determine the types of industry the County should encourage.

4. Investigate the possible establishment of a Foreign Trade Zone Industrial Park using tidewater Virginia ports as the point of import or export.

5. Establish an Industrial Revenue Bond Authority and list of industries the County would like to encourage locating in County.

6. Establish an Industrial Development Fund using Revenue from lease of farm land on Maple Airport property. Revenue from lease would go into new Industrial Development Fund to promote industrial development.

7. Develop detailed site plan and apply for grant funds to improve existing airport facilities with lighting and other safety features to improve the utilization of the facility.

d. Policy and Implementation Strategy Selected - The County will encourage industrial development that will not adversely impact the environment of Currituck, but will provide job opportunities for County citizens. The following approach will be used to begin the process of encouraging industrial development.

Establish an Industrial Revenue Bond Authority and list of industries the County would like to encourage to locate in Currituck.

Establish an Industrial Development Fund using revenue from lease of farmland on Maple Airport property. Revenue from lease would go into new Industrial Development Fund to promote industrial development.

Develop detailed site plan and apply for grant funds to improve existing airport facilities with lighting and other safety features to improve airfield utilization.

E. Nodal Development vs. Strip Development (Background)

The 1976 Land Use Plan stated that future growth should be limited and gradual. The 1980 LUP indicated a desire to continue the nodal concept of development and a reduction in the scattering of development. The plan recommended Moyock and Grandy as the two points in the County where development should be encouraged to concentrate. However, based on a review of the County Zoning Map, it was determined that 32.6% of the 158/168 thoroughfare north of the Coinjock bridge and 49.8% south of the bridge is currently zoned for commercial use. This current zoning pattern is in direct conflict with the County's stated goal to encourage a concentration of development in the Moyock and Grandy areas. The County will need to review this zoning pattern very carefully and possibly consider down zoning a portion of these currently undeveloped commercially zoned parcels to implement the County's desire to prevent the scattering of development along the 158/168 highway corridor.

Issue: Nodal Development vs. Strip Development

a. Issue - At present, over 41% of the U.S. 158/168 corridor is zoned for business use. This zoning pattern is in conflict

with the 1980 goal of encouraging development in the Moyock and Grady areas. To address this conflict, the County should look at the zoning patterns and consider the possibility of down zoning in some areas, or give consideration to encouraging nodal development, leaving business zoning pattern as presently defined and reducing the number of approvals for business zones outside the designated nodal areas.

b. Goals and Objectives - The primary objective is to encourage nodal development and reduce the likelihood of strip development taking place.

c. Policy and Implementation Options Considered

1. Do nothing and continue to allow commercial development to occur along much of the 158/168 corridor.

2. Consider down zoning some undeveloped property presently zoned for business to reduce the availability of land for commercial development and thereby reduce the potential for strip development.

3. Increase the minimum lot size requirements for commercial use to allow for more landscape screening and buffering.

4. Establish site plan review for all future commercial development and better landscape and buffer area improvement regulations.

5. Increase minimum lot width from 125 feet to 200 feet to reduce the potential number of developments and thereby curb cuts along the 158/168 corridor.

d. Policy and Implementation Strategy Selected - The County will continue to follow the policy as stated in the 1980 Land Use Plan concerning encouraging nodal development in the Moyock, Grandy, Point Harbor, and Corolla areas. The County will review current zoning and subdivision regulations to determine if special incentives can be established and implemented to encourage future development to take place in identified nodal communities. The County will also set specific boundary limits for nodal development areas.

The County will establish a site plan review procedure for all future commercial development and improved landscape and buffer area improvement regulations.

Nodal Development vs. Strip Development
Advantages and Disadvantages

Nodal Development

Advantages

Nodal development would encourage the concentration of more urban type development i.e. Commercial, Institutional and higher density residential in designated communities (Ex.: Moyock, Grandy, Point Harbor and Corolla)

Nodal development will slow the pace at which agricultural and wooded areas are converted for commercial or residential use.

Concentrating high density uses in nodal areas will help retain the asthetic and rural quality of the County.

Development of a central sewer system and water system will become more economically feasible by concentrating high density uses in nodal areas.

Traffic flow management through the 158/168 thoroughfare will be improved for an extended period by encouraging nodal development through zoning pattern and commitment of local officials and citizens to the nodal development concept.

Disadvantages

Property owners outside nodal areas will not be encouraged to develop their property with higher density uses such as subdivisions, commercial or industrial uses not already zoned for such uses.

Nodal Development vs. Strip Development
Advantages and Disadvantages

Strip Development

Advantages

Short term commercial growth and development will be enhanced.

Property owners fronting the 158/168 corridor will be able to develop property commercially.

Disadvantages

Long term traffic congestion, billboards and other signage will reduce the attractiveness of the County.

Strip development will remove agricultural land from production.

Strip development will reduce the aesthetic quality of the County primarily along the 158/168 corridor for present and future generations.

Strip development makes extension of water and sewer lines more costly to develop than serving concentrated development in nodal communities.

Acquisition of land for future widening of the 158/168 corridor will be more expensive if strip development is permitted to continue.

F. Public Access to the Outer Banks and Northern Banks

a. Issue - Better public access to the outer banks has been a concern to Currituck County citizens and local officials since the first land use plan was prepared. Effective Nov. 1, public access is now available from the Dare County line to Corolla, however, citizens living north of Corolla (Northern Banks) still must drive along the beach and around the Nature Conservancy - Monkey Island Tract to get to Swan Beach, Seagull and Ocean Beach and points north.

b. Goals and Objectives - Providing better access to the banks south of Corolla (Southern Banks) has been a primary goal of Currituck County. At a minimum, the County desires to improve access to the northern banks to permit the evacuation of the northern beach area in the event of a major storm or other natural emergency. The County also wishes to establish a bridge connection between the mainland and Corolla area of the outer banks.

c. Policy and Implementation Options Considered

1. Take no action and continue to permit access to the area north of Corolla by way of beach access with no upland access.

2. Discuss with Nature Conservancy the possibility of vehicular access across their property utilizing a minimum width easement and a paving surface such as Grassroad Pavers or other pavers that permit percolation of storm water into the soil. This "cart path" access could be restricted by a restrictive covenant setting a maximum usage of the "cart path" and permitting closing by the Nature Conservancy when this maximum usage is reached.

3. Discuss with Nature Conservancy the possible use of an easement to provide a cart path to be used for "emergency evacuation only". Open pavers would be utilized to permit percolation of water into the soil and to have as little environmental impact as possible.

4. The County will work with the U. S. Fish and Wildlife Service to establish a 100-foot upland dedicated public right-of-way across the Monkey Island and Swan Island Tracts to provide free, public access and evacuation corridor for northern Currituck Banks residents.

5. Work with DOT in establishing bridge connection from mainland to Corolla on State's 8-year highway plan.

6. Provide ferry boat access from Gibbs Woods and/or Knotts Island to the Northern Banks of Currituck.

d. Policy and Implementation Strategy Selected

1. The County will work with the U. S. Fish and Wildlife Service to establish a 100-foot upland dedicated public right-of-way across the Monkey Island and Swan Island Tracts to provide free, public access and evacuation corridor for northern Currituck Banks residents.

2. Work with DOT in establishing bridge connection from mainland to Corolla on State's 8-year highway plan.

3. Provide ferry boat access from Gibbs Woods and/or Knotts Island to the Northern Banks of Currituck.

G. Public Access to Ocean and Sound

Background Information: Many area residents on the Outer Banks desire to have designated public access to the ocean and sound at this time. The Currituck Outer Banks is very unique in the fact that until November of 1984, much of this area was not easily accessible by the general public. As the area primarily south of Corolla experiences more visitations by the general public, it will become more and more important that beach and sound access is made available to prevent or at least reduce the problem of trespassing on private property.

Based on a review of the County's subdivision regulations pertaining to water access, the ordinance presently requires that 20,000 square feet of access be provided for property owners of developments 20 lots in size or larger. The ordinance does not permit or require that some access be made available for the public as well as property owners. The County may need to consider a policy and means to require public access as new PUD's or larger subdivisions are being planned.

a. Issue - The County zoning and subdivision ordinance does not currently require public access to the ocean and sound. Since the 1976 Land Use Plan, access to the ocean and sound has been of great concern to County citizens and officials. As the waterfront areas develop, the County working with developers and State or federal agencies, must work together to provide adequate ocean and sound access.

b. Goals and Objectives - Providing more and better ocean, sound, and beach access for the public is a primary goal of Currituck County officials.

c. Policy and Implementation Options Considered

1. Leave current ordinances as presently written.

2. Revise the zoning ordinance to require developers to provide property owner and public access in proportion to the scale of development. The larger the development, the more water access area required.

3. Work with Nature Conservancy or future owners of this land in an effort to establish a public access beach in this area.

4. Work with the Audubon Society to establish a public access beach and sound access on the Pine Island property. This access, if arranged, should be used for passive recreation only.

5. Work with State or others as required to establish a public boat dock at the site of the former Corolla State dock as suggested by outer banks citizens.

6. Existing public street right-of-way that dead ends at the oceanfront will be designated as public beach access using CRC Beach access signs (e.g., Whalehead - 4 points, Swan Beach - 5 points, North Swan Beach - 4 points, Corova beach - 12 points). Designation of these streets will be done subsequent to local or State funds being made available for maintenance and when patrol of these public access ways can be assured by the County Sheriff's Department.

d. Policy and Implementation Strategy Selected

1. Work with State or others as required to establish a public boat dock at the site of the former Corolla State dock as suggested by outer banks citizens. Also, work with State, private land owners or federal agencies to establish a public boat access point in the northern part of the Currituck mainland.

2. Existing public street right-of-way that dead ends at the oceanfront will be designated as public beach access using CRC Beach access signs (e.g., Whalehead - 4 points, Swan Beach - 5 points, North Swan Beach - 4 points, Corova beach - 12 points). Designation of these streets will be done subsequent to local or State funds being made available for maintenance and when patrol of these public access ways can be assured by the County Sheriff's Department.

H. Commercial Development on the Outer Banks and Density of Residential Development

a. Issue - Currituck County now has a policy which permits PUD developers to designate 10% of their land area for commercial development. At present, the only area zoned for business development on the outer banks is located at Corolla. In addition, 21.3 acres at Ocean Sands and 1.86 acres are approved at Corolla Light for additional commercial development under the PUD ordinance. County officials must determine: 1) if it is in the County's best interest to permit a 10% designation for commercial development; and 2) what type of commercial development is appropriate on the outer banks considering an apparent limited supply of water and limited sewage treatment facilities. Also, the County needs to review current policy on residential density.

b. Goals and Objectives - The County wishes to establish a policy which permits commercial development to serve the needs of the area and, at the same time, is sensitive to the fragile environment of the outer banks.

c. Policy and Implementation Options Considered

1. No policy change and continue to allow PUD developments of 50 acres or more to designate 10% of their land area for commercial development.

2. Increase the minimum PUD size from 50 acres to 100 acres before a designation for commercial use will be permitted. Reduce designation for commercial use from 10% to 5%.

Present Requirements	Proposed Requirements
50 acres x 10% = 5.0 acres	50 acres No designation
100 acres x 10% = 10.0 acres	100 ac. x 5% = 5.0 acres
200 acres x 10% = 20.0 acres	200 ac. x 5% = 10.0 acres

3. Zoning ordinance (pages 22 and 8) presently permits uses allowed under the B-40 District Zone. These uses may be too broad for the outer banks, therefore, the County will establish a new commercial zone to govern PUD and other commercial areas on the outer banks.

4. Until adequate water and sewage treatment facilities are available on the outer banks, the County will change existing ordinances to permit hotels and motels as a conditional use on the outer banks and not a permitted use as presently stated in the County zoning ordinance.

During the early planning process and prior to establishing policy statements, the results of a questionnaire prepared and circulated by the Currituck Light Civic Association was tabulated by the consultant and reviewed during a Planning Board and County Commission work session. Recommended policy issues and statements pertaining to commercial development and hotel/motel development were generated based on the results of

this questionnaire and comments made during a public information meeting held on the Outer Banks. The four questions and responses in the questionnaire dealing with commercial and residential development were:

Question #	Question	Yes	No
1	Are you in favor of only single family lots?	86	5
2	Are you in favor of planned unit development?	17	22
5	Do you want more commercial development in your area?	13	81
6	Do you want hotel/motel units in your area?	3	94

Although this questionnaire reflected the feelings of less than 100 people, they live on the Outer Banks of Currituck and would be most directly affected by future development policy. Although residential density and PUD's were addressed in the questionnaire, no policy chages were discussed or recommended during the early work sessions. Also, during the final public hearing process, no comments were made to change current County policy pertaining to PUD's. However, during a final joint meeting of the Planning Board and County Commissioners, the desire to eliminate PUD's in Currituck County was discussed after a petition was presented by an Outer Banks resident with a request that PUD's no longer be permitted in Currituck. Following this request, the County Board of Commissioners directed the consultant to revise the policy statement to show a change in County policy that, when implemented by revisions to the existing ordinance, will eliminate future PUD's in Currituck.

d. Policy and Implementation Strategy Selected

1. Due to the fragile environment of the Outer Banks, the large number of residential and commercial developments already approved under the PUD ordinance and the unknown long term adverse affects of continuing to permit PUD's in such a fragile environment, the Currituck County Board of Commissioners feel that it is in Currituck County's best interest to consider the elimination of future PUD's in the County.

2. Zoning ordinance presently permits uses allowed under the B-40 District Zone. These uses may be too broad for the outer banks, therefore, the County will establish a new commercial zone to govern commercial areas on the outer banks.

3. Until adequate water and sewage treatment facilities are available on the outer banks, the County will change existing ordinances to permit hotels and motels as a conditional use on the outer banks and not a permitted use as presently stated in the County zoning ordinance.

I. Productive Agricultural Land (Background)

The 1980 Land Use Plan addressed prime agricultural land based on farm management techniques rather than soil characteristics. This approach was based on the lack of a detailed soils map in 1980 to identify prime agricultural land. In 1982, the County Detailed Soils Survey was published and specifically addressed prime farmlands. On August 23, 1983, Governor James B. Hunt, Jr. approved Executive Order 96 which addressed the need to conserve prime agricultural land in the State through cooperation of the Soil and Water Conservation District of North Carolina.

The 1982 Soils Report identified four soils comprising approximately 10,362 of the County's acres as prime farmland. Prime farmland includes Altavista fine sandy loam, Bojac loamy sand, Munden loam sand and State fine sandy loam.

a. Issue - Protection of Prime Farmland in Currituck County is a Goal of Currituck County Officials.

Conversion of prime lands to irreversible non-farm users may ultimately reduce food and fiber production capacity, thus forcing a reliance on marginally productive lands that would result in greater soil erosion, higher energy and fertilizer requirements and possible increased environmental damage.

b. Goals and Objectives - The County wishes to establish a policy to protect prime farmland and reduce as much as possible the loss of this natural resource.

c. Policy and Implementation Options Considered

1. Take no action and permit prime farmland to be converted to non-farm uses as the market dictates.

2. The Planning Board and County Commissioners will review proposed major non-farm uses as they relate to the prime farmland map to determine if there will be a significant adverse effect on prime agricultural land. The zoning and subdivision regulations will be amended to permit denial of a major non-farm use if it is determined that a significant adverse effect will occur.

3. Local officials will cooperate with the Soil & Water Conservation Commission and Soil and Water Conservation District as they review the impact of County, State or Federal actions on farmland in the County.

d. Policy and Implementaion Strategy Selected

1. Local officials will cooperate with the Soil & Water Conservation Commission and Soil and Water Conservation District as they review the impact of County, State or Federal actions on farmland in the County.

J. Commercial and Recreational Fisheries (Background)

The 1980 LUP discussed the importance of both commercial and recreational fishing on the local economy and measures that need to be taken to improve the Currituck Sound environment. Since the 1980 LUP was prepared, the DNRCD Marine Fisheries Division has identified and mapped spawning areas and a study has been completed which analyzed the impact of salinity introductions upon fish habitat in Currituck Sound. Since 1980, several measures have been implemented in an effort to improve the water quality of Currituck Sound. Specifically, the County has established a 40,000 square foot minimum lot requirement, and required new PUDs to provide a water and sewer system. The 1980 Plan indicated that the dissolved oxygen (DO) in the Sound at that time was 4 ppm and based on DNRCD information the (DO) levels are approximately the same five years later. County officials must now determine if additional steps need to be taken to improve the habitat environment of the Sound.

a. Issue: Should the County Take Additional Steps to Improve the Habitat Environment of the Currituck Sound?

b. Goals and Objectives: Local officials are aware that Currituck Sound is a significant natural and economic resource. The County's primary goal is to help protect and improve this resource.

c. Policy and Implementation Options Considered

1. Take no additional action on the local level and cooperate with State and Federal agencies in their efforts to monitor and improve the Sound's environmental quality.

2. Support efforts of local commercial fishermen to create a manmade inlet on the outer bank as discussed in the August, 1984 Salinity Study in an effort to improve water quality and increase oyster and blue crab habitat.

3. Have the Soil Conservation Service prepare a drainage plan for those areas adjacent to known fish spawning areas. Areas identified by the Elizabeth City office of DNRCD Marine Fisheries Division will be used. Plans will be used in an effort to reduce urban and farm runoff into identified spawning areas.

4. Use recently completed details soils map to identify marginal soils or areas subject to frequent flooding. Have Planning Board with assistance from the Soil Conservation Service and Elizabeth City Marine Fisheries Division, identify areas where additional set backs from the waterfront will be required to reduce possible effluent from reaching the Sound due to flooding or septic tank failure.

5. Continue to study the financial feasibility of a County sewer system in an effort to reduce the potential adverse impact of septic tank effluent reaching the Sound.

6. The County will work with the Extension Service, Soil Conservation Service and Elizabeth City Marine Fisheries Division to provide educational material to owners of hog operations pertaining to the impact of drainage operations on adjacent sounds and other bodies of water.

7. The Health Department should identify houses in the County with septic tank problems or houses lacking septic tanks or indoor plumbing. This information should be submitted to the County Manager for his review and review by the County Commissioners. Health Department staff should become familiar with alternative systems that can meet State standards and function in marginal County soils.

d. Policy and Implementation Strategy Selected

1. Have the Soil Conservation Service prepare a drainage plan for those areas adjacent to known fish spawning areas. Areas identified by the Elizabeth City office of DNRCD Marine Fisheries Division will be used. Plans will be used in an effort to reduce urban and farm runoff into identified spawning areas.

2. Continue to study the financial feasibility of a County sewer system in an effort to reduce the potential adverse impact of septic tank effluent reaching the Sound.

3. The County will work with the Extension Service, Soil Conservation Service and Elizabeth City Marine Fisheries Division to provide educational material to owners of hog operations pertaining to the impact of drainage operations on adjacent sounds and other bodies of water.

4. The Health Department should identify houses in the County with septic tank problems or houses lacking septic tanks or indoor plumbing. This information should be submitted to the County Manager for his review and review by the County Commissioners. The Health Department staff should become familiar with alternative systems that can meet State standards and function in marginal County soils and then make this information available to citizens.

K. Redevelopment of Development Areas

In 1984, the County identified those areas with concentrations of substandard dwellings in need of rehabilitation. In that same year, an application was prepared and submitted to the State in an effort to receive grant funds to address identified needs.

same year, an application was prepared and submitted to the State in an effort to receive grant funds to address identified needs. Although the County was not successful in receiving approval of the application, the County will continue to make efforts to improve these areas if funding sources can be identified. The County shall continue to consider and utilize any State or Federal program that can help in the redevelopment of substandard areas of the County including housing programs, water and sewer utility programs and any other programs County officials consider beneficial to County citizens.

L. Commitment to State and Federal Programs

The County supports State and Federal programs in the County which include some programs required by law (e.g. CAMA permits). The County supports State highway improvements, dredging and maintenance of the Knotts Island Ferry route, and maintenance of the Intracoastal Waterway. The County also supports State and Federal efforts on erosion control and assistance for any of the above mentioned projects during the planning period. The County will work with State and Federal agencies to obtain easements and spoil areas for necessary work. County officials and agencies will assist State and Federal agencies, upon request to work with private landowners as requested to implement State and Federal programs considered beneficial to Currituck County citizens.

M. Flood Hazard Areas

Currituck County received the Detailed Flood Hazard Maps since the 1980 LUP was adopted. As of November 1, 1984, these more detailed flood hazard maps have been available and show the location of areas affected by the 100-year flood and referred to as the A Zone. Much of the land area of Currituck County is located in this A Zone. The primary exception is the land area along and including the 158/168 corridor from Currituck Courthouse south. Although these maps have been available since late 1984, local officials have raised questions about accuracy in certain parts of the County. Local officials and Federal Flood Insurance Program officials should work together to resolve any questions pertaining to the accuracy of these maps and make necessary revisions if warranted.

Selected Policy: The County Building Inspector will use these flood hazard maps to establish finished floor elevations at which new structures are to be built and in an effort to reduce future damage from flooding in the County.

N. Wetlands

The County has determined that the wetlands in the County are a valuable resource. Since many other areas exist for development and wetlands are also poor for on-lot sewage disposal, filling of wetlands for development is neither necessary nor desirable. The County considered the following alternatives to the selected

policy: (1) requiring large lots on wetlands, (2) requiring submission of an environmental impact statement before developing wetlands, (3) status quo.

Selected Policy: Allow no development on areas designated as wetland which would require dredging or filling except for farm uses, placement of utilities, or uses which would require the interface of wetland areas with water uses (such as marina development) and only with adherence to rules and regulations of CAMA and Corps of Engineers 404 permits.

11. Storm Hazard Mitigation, Post-Disaster Recovery, and Evacuation Plans

The entire North Carolina Coastal region, including Currituck County, faces strong threats of damage each year from hurricanes, Northeasters, or other major storms. For nearly 20 years, there was a marked "slowdown", or "lull", in hurricane activity along the State's coast. Predictions were that a major storm could strike the State at any time during the hurricane season, since such a storm was "long overdue". And then, in September, 1984, the "waiting" ended. Hurricane Diana, with some of the strongest sustained winds ever recorded, rammed into the Southeast coast near Wilmington. Although damage was extensive, the potential destruction was much greater and the damage would have been greatly escalated had the storm hit land at a slightly different location. This time the State and the Southeast coastal area were relatively fortunate. Next time the coastal area may not be as fortunate.

Notice the excerpt below from, Before the Storm: Managing Development to Reduce Hurricane Damages, McElyea, Brower, & Godschalk, 1982, concerning development in coastal communities:

> "At the same time, development along the coast has grown by leaps and bounds. Unless this development is wisely located and built to withstand hurricane forces, North Carolina's coastal communities will face massive destruction. Local governments, as the primary protectors of the public health, safety, and general welfare, have a responsibility to reduce the risk of property damages and loss of life attending coastal development. They also have a responsibility to ensure that reconstruction following a major storm can occur quickly and leave the community safer from disaster in the future. These are the goals of a hazard mitigation and reconstruction planning." (p.iii)

The purpose of this section of the 1985 CAMA Land Use Plan Update, is to assist Currituck County in managing development in potentially hazardous areas by establishing hazard mitigation policies to reduce the risks associated with future hurricanes. By developing post-disaster reconstruction/recovery policies, and reviewing the adequacy of current evacuation plans, the County will hopefully reduce the risks associated with future hurricanes.

> "Hazard mitigation includes any activity which reduces the probability that a disaster will occur or minimizes the damage caused by a disaster. Hazard mitigation includes not only managing devlopment, but also evacuation planning and other measures to reduce losses of life and property. Reconstruction involves the full range of repair activities in the wake of a disaster which seek to return the community to a "normal" level

of operations." (McElyea, Brower, & Godschalk, p. iii).

With this introduction, the following pages will present the storm hazard mitigation and post-disaster recovery policies, and review of the existing evacuation plan along with appropriate discussions and maps.

1. Storm Hazard Mitigation: Discussion

Hazard mitigation, or actions taken to reduce the probability or impact of a disaster could involve a number of activities or policy decisions. The starting point, however, is to identify the types of hazards (including the relative severity and magnitude of risks), and the extent of development (including residential, commercial, etc.) located in storm hazard areas.

Hurricanes are extremely powerful, often unpredictable forces of nature. The two most severe effects are fatalities and property damage, which are usually the result of four causes: high winds, flooding, wave action, and erosion, each of which are discussed briefly below:

a. High Winds

High winds are the major determinants of a hurricane, by definition, i.e., a tropical disturbance with sustained winds of at least 73 miles per hour. Extreme hurricanes can have winds of up to 165 miles per hour, with gusts up to 200 miles per hour. These winds circulate around the center or "eye" of the storm. Although the friction or impact of the winds hitting land from the water causes some dissipation of the full force, there is still a tremendous amount of energy left to cause damage to buildings, overturn mobile homes, down trees and powerlines, and destroy crops. Also, tornadoes can often be spawned by hurricane wind patterns. Wind stress is an important consideration in storm hazard mitigation planning. Because of a hurricane's size and power, it is likely that all of Currituck County would be subject to the same wind velocity in the event of a storm.

b. Flooding

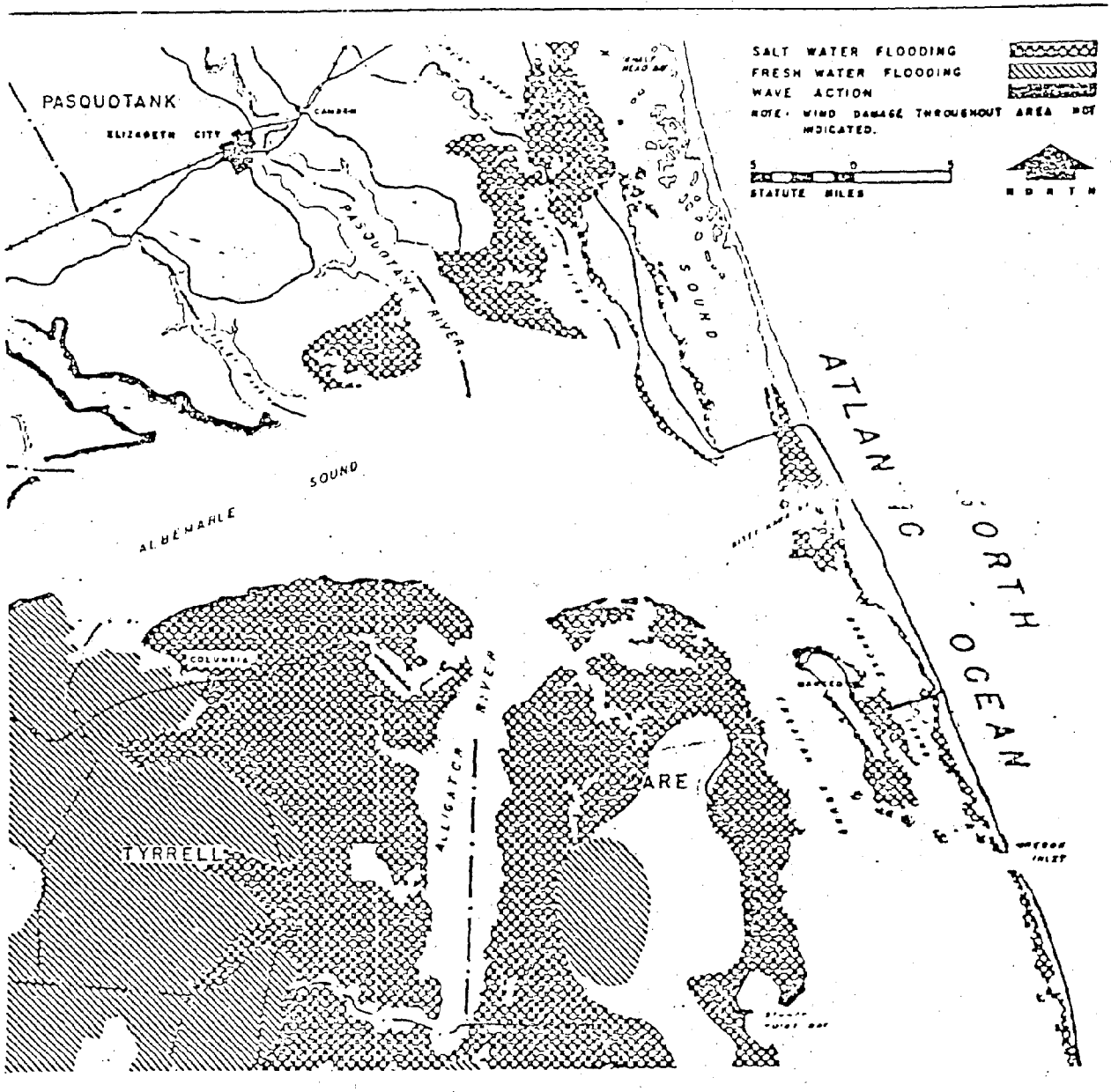
Flooding, on the other hand, may not affect all areas with equal force. The excessive amounts of rainfall and the "storm surge" which often accompany hurricanes can cause massive coastal and riverine flooding causing excessive property damage and deaths by drownings. (More deaths are caused by drowning than any other cause in hurricanes.) Flooding is particularly a problem in ocean coastal areas because of the storm surge and low-lying areas. However, flooding can cause extensive damage in inland areas also, since many coastal areas have low elevations and are located in high hazard or "Zone A" flood areas according to the Federal Emergency Management Agency Maps. Based on recently completed

flood insurance maps prepared for Currituck County, much of the County is classified as being in the 100-year "high hazard" flood zone, or Zone A. Because of low elevation, much of the County would be subject to flooding during a severe hurricane. There are, however, "pockets" of areas classified as "Zone C", i.e., in the 500-year "minimally flooded" area. In severe storms, Zone C areas would also likely be flooded, but risks are not as severe as for Zone A areas. (See Flood Hazard Boundary Map).

Flooding can not only cause damage to buildings, but salt-water flooding can cause serious damage to croplands, which is what took place in the Albemarle region, including Currituck County in 1954 and 1955 from Hurricanes Hazel, Connie, Dianne, and Ione (McElyea, Brower, & Godschalk, pp. 2-8, 9). Notice Figure 1 on the following page. Consideration of potential flood damage is important to Currituck County's efforts to develop storm mitigation policies.

FIGURE 1

Flooding in the Albemarle Sound Region from Hurricanes Hazel, Connie, Diane, and Ione (1954-1955)



Source: N. C. Council of Civil Defense, 1955.

c. Wave Action

Damage from wave action is connected very closely to the storm surge, i.e., wind-driven water with high waves moving to vulnerable shoreline areas. Areas most likely to be affected are ocean hazard areas and estuarine shoreline areas. There are extensive estuarine shoreline areas (75 feet inland from the mean high water mark of estuarine waters) in the County and ocean hazard areas along the outer banks. Wave action damage would have the most significant impact along the Atlantic Ocean beach front and Sound shoreline. As the existing land use map and the Flood Hazard Boundary Map show, there is a significant amount of residential development in or near the estuarine shoreline area and developed continuing along the outer banks. Wave action can cause erosion as well as push possible flood waters to areas not reached by the storm surge itself. The estuarine shoreline along Currituck's riverine shores, i.e. Shingle Landing Creek at Moyock, are sufficiently inland from an open coast so that the wave energy is dispersed and diffracted, mainly by the proximity to forested areas. Figure 1, page 70, also shows the pattern of wave action damage in Currituck County from the hurricanes of 1954 and 1955.

d. Erosion

The final major consideration in storm hazard mitigation is severe erosion, caused by high winds, high water, and heavy wave action. Again, in Currituck County, the area most susceptible to storm-related erosion is the estuarine shoreline AEC along the Currituck Sound and the ocean front. This is essentially the same area potentially affected by the action of damaging waves and described in part c, above. Shoreline erosion could lead to loss of property through portions of waterfront lots being washed into the Sound and ocean or even actual structural damage to buildings. Erosion potential is an important factor to consider in developing storm hazard mitigation policies.

e. Summary: Storm Hazard Mitigation Considerations

In summary, all four of the major damaging forces of a hurricane, i.e., high winds, flooding, wave action, and shoreline erosion could have a potential impact upon Currituck County in the event of a major storm. The degree of susceptibility to losses and/or damages was generally alluded to in the previous discussions. However, Table XVII provides a better projection of the percent of the County's building structures (residential and commercial, etc., subject to the potentially devastating effects of a major storm:

Table XVII *Percent of Structures Subject to Storm Damage Factors, Currituck County

Storm Impact	Percent Structures Possibly Affected
1. High winds	100%
2. Flooding	50%
3. Wave Action	67%

Based on preliminary estimates derived from examination of the 1985 Existing Land Use Map and Flood Hazard Boundary Map as prepared by Talbert, Cox & Associates.

The information in the Table above is an estimate and is not intended to convey the impression that every single structure possibly affected by damaging factors would be affected, only that the potential is there. Knowing that the potential is there forms the basis for setting forth storm hazard mitigation policies, keeping in mind that "mitigate" means actions which may reduce the probability of disaster, or minimize the damage caused by a disaster (McElyea, Brower, & Godschalk, p. iii).

f. Policy Statements: Storm Hazard Mitigation

In order to minimize the damage potentially caused by the effects of a hurricane or other major storm, Currituck County proposes the following policies.

1. High Winds

Currituck County enforces the N. C. State Building Code, particularly requirements of construction standards to meet wind-resistive factors, i.e., "design wind velocity". The County also enforces provisions in the State Building Code requiring tie-downs for mobile homes, which help resist wind damage.

2. Flooding

Currituck County is supportive of the hazard mitigation elements of the National Flood Insurance Program. The County has had the Flood Insurance Rate Maps since November 1, 1984 and all reference to Flood Hazard Areas in the LUP refer to flood hazards as identified by these maps. Currituck County also supports continued enforcement of the CAMA and 404 Wetlands development permit processes in areas potentially susceptible to flooding.

What is at Risk on the Outer Banks

Although there is a relatively small amount of development on the Currituck Outer Banks compared to other North Carolina coastal areas, what is in place would be in jeopardy if and when a major storm hit in the area. Of the approximately 514 dwelling units on the outer banks, approximately 257, or 50%, appear to be in the Zone A Flood Hazard area. Also, the Ocean Sands Package Treatment Plant would be adversely affected by major flooding or an ocean overwash, which did occur in this area in 1962. This one means of egress from this area could be flooded or washed away by an ocean overwash leaving those north of any overwashed road without a hard surface road for use as an evacuation route.

On the mainland over 3/4 of all homes and businesses in the Moyock area are located in the Zone A area. Along the 158/168 highway corridor at Coinjock and the area north of Currituck is located in the Zone A area. All shorefront development on the mainland and fronting on the sound is located in the Zone A Flood Hazard Area. Based on the 1985 Existing Land Use Plan, it appears that approximately 50% of all commercial and residential development along rivers and sounds would be affected by a 100-year flood.

3. Wave Action and Shoreline Erosion

Currituck County is supportive of the CAMA development permit process for estuarine shoreline areas and the requisite development standards which encourage both shoreline stabilization and facilitation of proper drainage. The County is aware of potential overwash areas on the outer banks and these areas have been identified in the 1983 Carrying Capacity Study by the Department of City and Regional Planning of Chapel Hill.

g. Implementation: Storm Hazard Mitigation

1. Currituck County has adopted a Flood Damage Prevention Ordinance for the Regular Phase of the National Flood Insurance Program. This ordinance requires basic floodproofing for all new construction, including all first floor elevations being 2' above the base flood elevations. The base flood elevation, as shown on the flood insurance maps, is the elevation of the 100-year flood. This program is administered by the County Building Inspection Department.

2. The County will continue to support enforcement of State and Federal programs which aid in mitigation of hurricane hazards, including CAMA and the U. S. Army Corps of Engineers 404 permit process.

3. Post-Disaster Reconstruction Plan

Currituck County recognizes that in the event of a major storm, it will be very important to have, at a minimum, a general recovery and reconstruction plan. This section of the Land Use Plan Update will address this issue.

a. Appointment of a "Post Disaster Recovery Team"

In the event of a major storm having landfall in the vicinity of Currituck County, when evacuation orders are issued, the Chairman of the County Board of Commissioners shall appoint a "Post-Disaster Recovery Team". This team shall consist of all of the members of the Evacuation Plan Support Group as identified in the Currituck County Evacuation Plan, and others whom the Chairman may appoint. The total team may consist of the following:

1. County Finance Officer
2. Emergency Management Coordinator (Team Leader)
3. County Sheriff
4. County Building Inspector
5. Director of Social Services
6. Local realtor or building contractor

The Emergency Management Coordinator will serve as the Team Leader and will be responsible to the Chairman of the Board of Commissioners. The base of operations will be the Emergency Operations Center (EOC) identified in the County Evacuation Plan (the County Courthouse). The Disaster Recovery Team will be responsible for the following:

1. Establishing an overall restoration schedule.
2. Setting restoration priorities.
3. Determining requirements for outside assistance and requesting such assistance when beyond local capabilities.
4. Keeping the appropriate County and State officials informed.
5. Keeping the public informed.
6. Assembling and maintaining records of actions taken and expenditures and obligations incurred.
7. Recommending to the Chairman of the Board of Commissioners to proclaim a local "state of emergency" if warranted.

8. Commencing and coordinating cleanup, debris removal and utility restoration which would include coordination of restoration activities undertaken by private utility companies.

9. Coordinating repair and restoration of essential public facilities and services in accordance with determined priorities.

10. Assisting private businesses and individual property owners in obtaining information on the various types of assistance that might be available to them from federal and state agencies.

b. Immediate Clean-Up and Debris Removal

As soon as practical after the storm, the Disaster Recovery Team will direct appropriate County personnel, and as necessary, request State and/or federal assistance to begin clearing fallen trees and other debris from the County roads and bridges.

c. Long Term Recovery/Restoration

The Disaster Recovery Team will be responsible for overseeing the orderly implementation of the reconstruction process after a major storm or hurricane in accord with the County's policies. The County would contact State and Federal agencies to request financial assistance to repair or reconstruct damaged or destroyed property.

1. Damage Assessments

Damage assessments will be necessary to determine as quickly as possible a realistic estimate of the amount of damage caused by a hurricane or major storm. Information such as the number of structures damaged, the magnitude of damage, and the estimated total dollar loss will need to be developed.

As soon as practical after the storm, i.e., clearance of major highways and paved roads in the County, the Disaster Recovery Team Leader shall set up a Damage Assessment Committee (DAC), consisting of the Building Inspector, Emergency Management Coordinator, a local realtor or building contractor, and appropriate personnel from the Currituck County tax department. The DAC will immediately begin to make "windshield" surveys of damaged structures to initially assess damages and provide a preliminary dollar value of repairs or replacement. The following general criteria shall be utilized:

a. Destroyed (repairs would cost more than 80 percent of value).

b. Major (repairs would cost more than 30 percent of the value).

c. Minor (repairs would cost less than 30 percent of the value, but the structure is currently uninhabitable).

d. Habitable (some minor damage, with repairs less than 15 percent of the value).

Each damage assessment will be documented according to County tax records. Also, County tax maps (including aerial photographs) and/or records may be used for identification purposes). The total estimated dollar value of damages will be summarized and reported to the Disaster Recovery Team Leader.

2. Reconstruction Development Standards

Generally, reconstruction shall be held at least to the same standards as before the storm. However, developed structures which were destroyed and which did not conform to the County's storm hazard mitigation policies, i.e., with basic measures to reduce damage by high winds, flooding, wave action or erosion, must be redeveloped according to those policies. In some instances, this may mean relocation of construction, or no reconstruction at all. Building permits to restore destroyed or damaged structures, which were built in conformance with the State Building Code and County storm hazard mitigation policies, shall be issued automatically, all structures suffering major damage will be repaired according to the State Building Code. All structures suffering minor damage, regardless of location, will be allowed to be rebuilt to the original condition prior to the storm. The County Sanitarian and Building Inspector will consider permitting reconstruction (between 30-80% of value of damaged homes requiring a septic tank) on a case by case basis if soil type does not meet current septic tank requirements as of date damage or destruction occurred.

Development Moratoria

Currituck County, because of a lack of densely populated areas, does not foresee the need to prohibit any and all development for any specified period of time. Residents shall be allowed to proceed with redevelopment and reconstruction as soon as practical and in accord with the various levels of State and federal disaster relief provided to them. The Disaster Recovery Team will coordinate with the State

Building Association and other home construction organizations in assembling a list of qualified contractors interested in assisting with reconstruction.

4. Repair/Reconstruction Schedule

The following schedule of activities and time frame are proposed with the realistic idea that many factors of a hurricane may render the Schedule infeasible.

Activity	Time Frame
a) Appoint Damage Assessment Committee	6 hours after storm
b) Complete and Report Damage Assessments	Two weeks after storm
c) Begin Repairs to Critical Utilities and Facilities	As soon as possible after storm
d) Permitting of Reconstruction activities for all damaged structures ("minor" to pre-storm original status, "major" to State building code and hazard mitigation standards	Two weeks after damage assessments are complete

5. Agency Responsible for Implementation

The Chairman of the Currituck County Board of Commissioners, as chief elected official of the County, will serve as overall Chairman of Control Group. The Board Chairman will delegate the oversight of the reconstruction and recovery effort and implementation of the plan.

6. Repair and Replacement of Public Utilities

At present, Currituck County does not have a water and sewer system. However, the County is presently considering installing a water system in a portion of the County.

4. Hurricane Evacuation Plan

Currituck County has an official "Emergency and Evacuation Plan," which was revised in June, 1983. A brief review of this plan indicates that it is generally adequate with the exception of one area as noted from a review of the November, 1984 Flood Hazard

Maps. Specifically, the Moyock School which is to serve as an evacuation shelter for residents of Ranchland, Moyock, Universal Park and Gibbs Woods, is located in the 100-year flood zone as shown on the Flood Hazard Maps. Also, the County may want to coordinate with Chesapeake and Virginia Beach for sheltering residents of Gibbs Woods. Because residents of this area must drive through low areas in Virginia before heading south back into Currituck, it may be better to provide shelter for them in closer proximity to the residences which would be in Chesapeake or Virginia Beach.

12. Land Classification

The land classification system has been developed as a means of assisting in the implementation of selected policies. By delineating land classes on a map (See maps appended) the County can specify those areas where certain policies (local, state, and federal) will apply. It must be remembered that land classification is merely a tool to help implement policies and not a strict regulatory mechanism.

The following classes have been determined to apply in Currituck County:

DEVELOPED

The purpose of the developed class is to provide for continued intensive development of areas currently at or approaching a density of 500 dwellings per square mile that are provided with the usual municipal or public services including at least public water, sewer, recreational facilities, police and fire protection. Although Currituck County has no municipalities within its boundaries, three areas generally meet the above criteria. These areas are Universal Trailer Park in Moyock Township, Walnut Island in Poplar Branch Township and Ocean Sands on the Outer Banks. These areas have a water and sewer system and are densely developed with mobile homes in the case of Universal Park and Walnut Island and single family and multi-family homes at Ocean Sands.

TRANSITION

The purpose of the transition class is to provide for future intensive development within the ensuing ten years on lands that are most suitable and that will be scheduled for provision of necessary public utilities and services. The transition lands also provide for additional growth when additional lands in the developed class are not available or when they are severely limited for development. Areas in the County classified as transition include the community of Moyock and the land on each side of NC 168 to the Virginia line, along NC 158 from Barco to just south of the new Coinjock Bridge. The Maple Airstrip site just north of NC 158 has been designated transition based on the Counties stated goal to develop this site for industrial development during the planning period. The Grandy area has been retained as a transition area primarily along the NC 158 highway corridor. Point Harbor north to the intersection of State Road 1112 with NC 158 has been designated transition in anticipation of continued commercial and residential growth in this area.

In 1980 the County anticipated the purchase of the Outer Banks north of Corolla by the Federal Government and for that reason all of this area was included in the Conservation Class. Although two tracts have been purchased for conservation north of Corolla since 1980 much of the area north of Corolla is privately owned and some limited development is anticipated for this area. Also, the County has established a policy to work toward Ferry Access to the area from Knotts Island with no upland road access to this area from Corolla. Carova Beach, North Swan Beach, Swan Beach, Seagull and Ocean Beach have been included in the transition classification. Corolla Village, Whalehead Club, and an undeveloped tract just north of the Dare County line have also been included in the transition classification.

COMMUNITY

The purpose of the community class is to provide for clustered land development to help meet housing, shopping, employment and public service needs within rural areas of the County. The lands shown on the classification map are those in the rural areas of the County characterized by small groupings of mixed land uses, (residences, general store, church, school, etc.) and which are suitable and appropriate for small clusters of rural development not requiring municipal sewer service (e.g. Currituck, Shawboro, Aydlett, Poplar Branch, Powells Point and Knotts Island.)

RURAL

The purpose of the rural class is to provide for agriculture, forest management, and other low intensity uses. Residences may be located in rural areas where urban services are not required and where natural resources will not be permanently impared, In Currituck County, most of these areas are in agricultural use.

CONSERVATION

The purpose of the conservation class is to provide for effective long term management of significant limited or irreplaceable areas. This management may be needed because of its natural, cultural, recreational, productive or scenic value. In Currituck County, this class is applied to major wetlands, state and federal recreation and wildlife conservation areas and the Swan Island Tract, Monkey Island Tract and Audubon Society Tract on the Outer Banks. Also, all navigable water bodies are included.

Relationship of Policies and Land Classification

Developed: Universal Park, Walnut Island and Ocean Sands have been designated developed based primarily on existing and/or anticipated densities and the provision of water and sewer.

Transition: Areas designated as transition areas represent sections of the County where development has been taking place since the 1980 plan was prepared and areas where the County anticipates development continuing during the planning period. On the mainland, all transition areas are found along the NC 158/168 highway corridor with the exception of the Maple Airstrip site. All future development in these areas as well as those on the Outer Banks will be guided by the County Zoning Ordinance. As discussed earlier Carova Beach, North Swan Beach, Swan Beach, Seagull, Ocean Beach, Corolla Village and Whalehead Club have been included in the transition classification based on current and anticipated growth in these areas.

The opening of a public paved road from Dare County to Corolla will probably increase development pressure in this section of the Outer Banks. Although lack of access by road to the area north of Corolla will continue to make development in this area much slower, development will most likely continue. The County has established a policy to work with DOT in establishing a ferry access point between Knotts Island and the Outer Banks north of Corolla Village, with no road access north of Corolla Village, in an effort to prevent the over development of the Outer Banks.

COMMUNITY: Community areas serve a useful function in a rural County by serving as focal points for rural residences and providing limited services such as a store, post office, church, etc. Although the County recognized the need for these small communities, it is not County policy to support or encourage their growth. The County wishes to concentrate facilities and services in designated transition areas; however, because of the County's geographic configuration it may require extending water and eventually sewer lines past or through designated Communities in an effort to have enough users of the system to make its operation economically viable.

RURAL: The rural class includes areas used primarily for agriculture, or contain forrest areas. County policy is to keep these areas in agriculture by implementing zoning regulations. Appropriate uses in these areas are farming, forestry, rural residential and utility lines and pipes.

CONSERVATION: The conservation class, which includes all wetlands, state and federal recreation and wildlife protection areas, and AEC areas which include ocean hazard areas, estuarine shoreline, coastal wetlands, estuarine and public trust waters, are intended for long-term management to maintain these resources. The overall policy concept and the major thrust of implementation, is to manage development so that the location and density of development is steered away from areas where associated results of development (e.g. septic tank pollution, erosion) will be of less possible harm to conservation class areas. The County feels that island development can adequately be protected by zoning, CAMA regulations, and federal regulations, and does not wish to establish additional regulations.

Uses in this class would include water dependent uses such as marinas, fish hatcheries and fish ponds, game preserves, lodges, public or private parks, single family detached dwellings, and utility lines or pipes. The location and construction of any of the above uses would be subject to other standards in the zoning and subdivision regulations as well as CAMA regulations.

13. Intergovernmental Coordination

During the planning process, County staff and consultant met with adjacent municipalities, as well as State and Federal agencies to discuss planning issues and other items of mutual interest. As the County goes from planning to implementation County staff will continue to coordinate with adjacent officials on issues and concerns of mutual interest.

14. Public Participation

Currituck County officials recognize that an important element in developing and implementing any local policies or plans regarding the use of land in the County, must involve the County's citizens. From the initial stages of development of this 1985 update of the County's CAMA Land Use Plan, County officials have sought to provide open opportunities for citizen input. A "Public Participation Plan" was developed for the plan updating process, outlining the methodology for citizen involvement. The plan stated that public involvement was to be generated primarily through the County Planning Board and through "public information" meetings, advertised in local newspapers and open to the general public. The Planning Board meetings also are open to the general public.

Specifically, the County held four public information meetings in early November to outline the purpose of the plan and to gain information and discuss land use as well as other issues. Following this process, a group of citizens from the Currituck outer banks prepared a land use questionnaire for distribution. This information was received and tabulated and reviewed by the Planning Board and County Commissioners. Many of the issues and policies incorporated into the plan were a direct result of this questionnaire and concerns raised at public meetings. The Planning Board and Board of Commissioners have held six planning work sessions which have been open to the public. On several occasions, these meetings have been attended by the public.

As draft policy statements and issues were completed, drafts were provided to the local newspaper with a request to publish articles dealing with the land use planning process. Also, draft copies of the plan will be distributed throughout the County to these citizens expressing an interest in reviewing a draft prior to the June public information meeting.

In June, a public meeting was held to review the draft LUP update prior to submittal of the plan to the Coastal Resources Commission. Citizens were given the opportunity to submit written comments on the plan to Mr. Wallace O'Neal during the month of July. Following formal adoption of the Plan, copies will be retained at the County Manager's office, Zoning Officer's office, and County library. Prior to official adoption of the Land Use Plan update, a public hearing will be held to review the plan and receive public comment. Citizens may request revisions to the plan following CAMA review and approval requirements anytime during the five year planning period. All subsequent updates of the plan will be done in compliance with public participation requirements.

It is the belief of the Currituck County Board of Commissioners that all citizens be afforded adequate opportunities to participate in the governmental and planning decisions which affect them. Therefore, citizens input will continue to be solicited, primarily through the Planning Board with advertised and adequately publicized public meetings held to discuss special land use issues, and to keep citizens informed.

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Maritime Forests Information from Mr. David H. Rackley, Acting Field Supervisor of the U. S. Department of Interior, Fish and Wildlife Service by telephone interview 10/14/85

Currituck County Boat Access and Recreation Areas

Name and Location	Acreage, if known	Boat Launch Ramp Unimproved	Boat Launch Ramp Improved	Parking Capacity	Comments
1. Indian Creek S. of Shawboro			X	6-8	Canoe & Cartop launch on road ROW
2. Newberns Landing No. River, Powells Pt.		X		6-8	Dirt Road, Shallow
3. Ski Lagoon Motel End SR 1102		X		-	Road parking only "Motel Guests only"
4. End of SR 1106 Point Harbor				-	"For Property Owners and Guests" (Swimming)
5. Hog Quarter Landing, Spot		X		-	7-8 Slips, Dirt Ramp
6. Walnut Island Trailer Court, Grandy			X	20	Boats for rent
7. Waterview Shores Grandy		X		-	Presumed private
8. Poplar Branch NC WRC Access Area	4		X	30	Heavy Local use
9. Rivera Lodge S. of Coinjock			X	10-15	Access to N. River & Intracoastal Waterway
10. Stoney's Fish Camp, Coinjock	2.5	X		25-30	6 camp sites, ICW dockside services
11. Coinjock, NC WRC Access Area	5		X	50	Inaccessible when grounds are wet
12. Hampton Lodge Campground, Coinjock	110		X	4-50	200 camp sites, Recreation Bldg.
13. Currituck Bait Barn, Maple			X	9	

Currituck County Boat Access and Recreation Areas

	Name and Location	Acreage, if known	Boat Launch Ramp Unimproved	Boat Launch Ramp Improved	Parking Capacity	Comments
14.	Bell's Island Campground	14		X	40	150 Camp sites; other private facilities
15.	Tull's Bay Marina, Moyock	3		X	10-15	10-12 Slips
16.	Coleman Youth Camp, Moyock			X	10-15	Canoe launch only, swimming, tennis
17.	Barnes Marina & Camp, Knotts Island				?	
18.	Williams Lodge Knott's Island		X		?	SR 1260 Road end
19.	Bay Villa Marina & Camp, Knott's Island				?	
20.	Brumley Road Knotts Island		X			SR 1257 Road end; road parking only
21.	Back Bay Ramp N. Knotts Island			X	25-30	In Virginia; access through Knotts Is.
22.	Corolla Beach Access Area, NCWRC	5				Not Accessible except by boat (to gen'l pub.)
23.	Coinjock Esso and Gulf Marinas - docking and dockside services on Intracoastal Waterway.					
24.	Mackay Island Nat'l. Wildlife Refuge	700				Access from Knotts Is.
25.	North West River Game Land, NCWRC	1251				
26.	North River Game Land, Coinjock	8430			10	Bear Preserve
27.	Maple Airstrip HY. 158 & SR. 1246					Leased by county from State of NC

Currituck County Boat Access and Recreation Areas

Name and Location	Acreage, if known	Boat Launch Ramp Unimproved	Improved	Parking Capacity	Comments
28. Camp Lazy B. Hy. 81 615, Knotts Is.			X	10-15	300 tent sites, plus 54 with full hookups.

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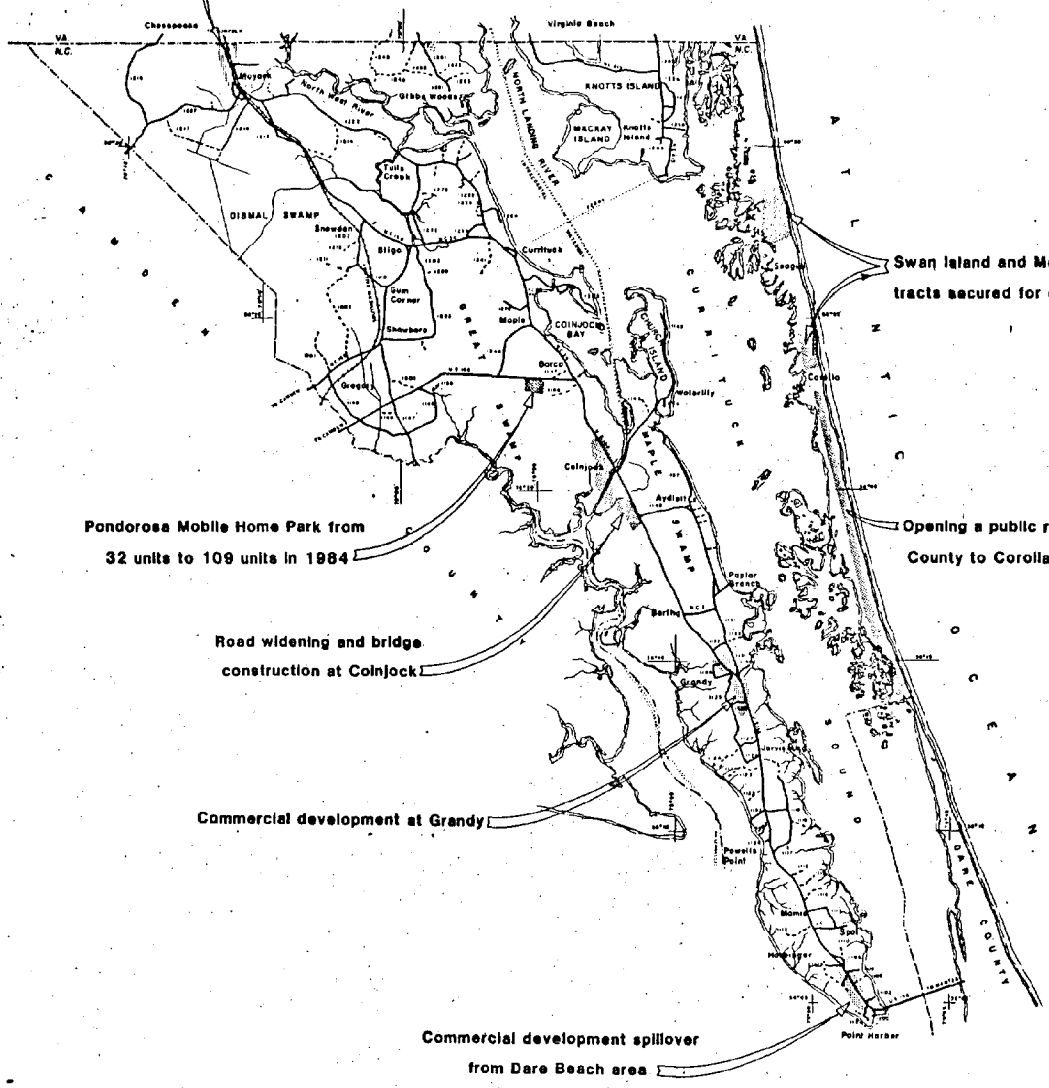
LEGEND
1100 Secondary Road Numbers
Hard Surface Road
Unsurfaced Road
State Line
County Line
Intracoastal Waterway
Ferry Route



1985 LAND USE PLAN

RITUCK COUNTY, NORTH CAROLINA

MAJOR LAND USE CHANGES SINCE 1980

Scale in Miles

Talbert, Cox & Associates, Inc.

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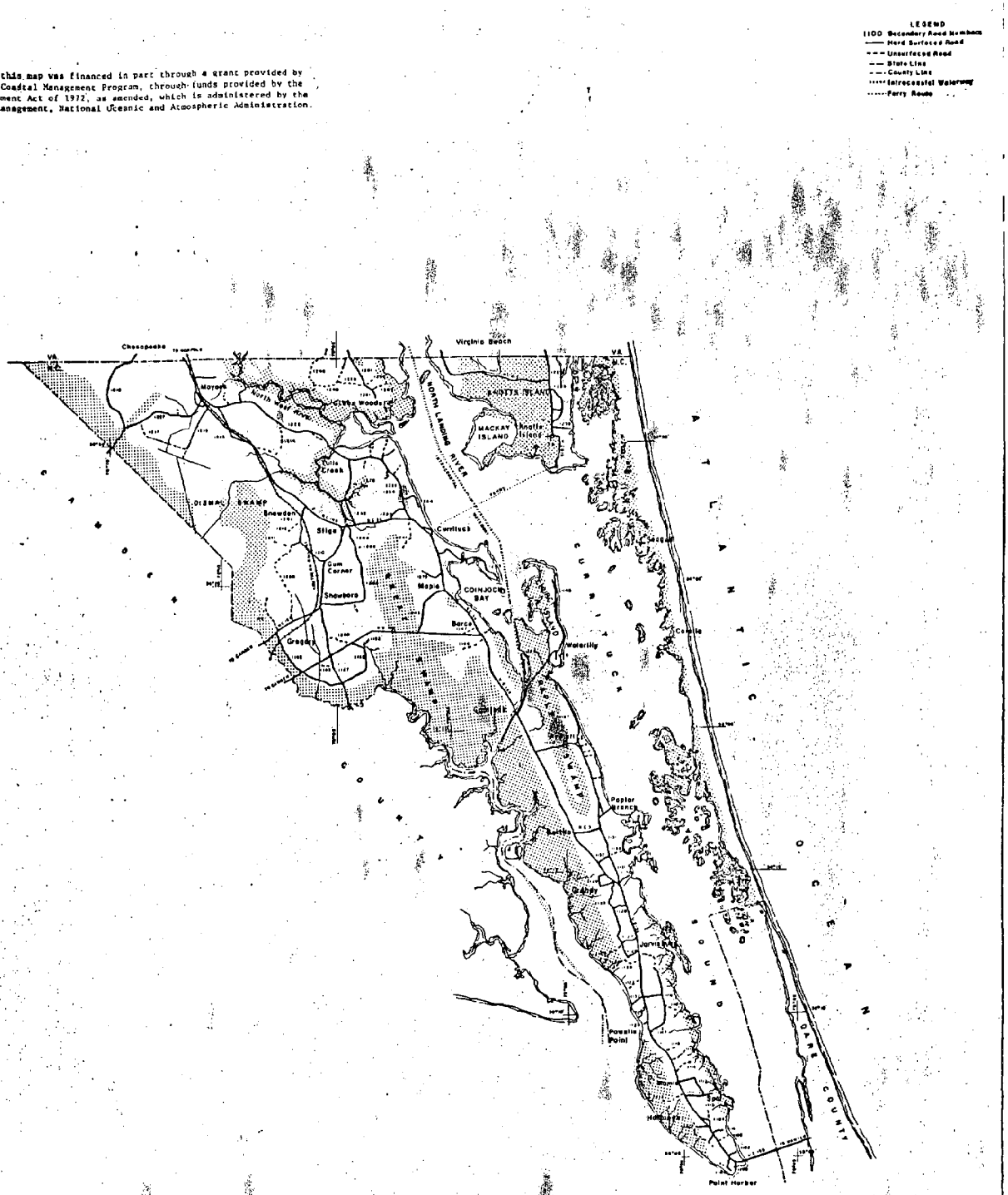

1985 LAND USE PLAN

RITUCK COUNTY, NORTH CAROLINA

WETLAND

Scale in Miles

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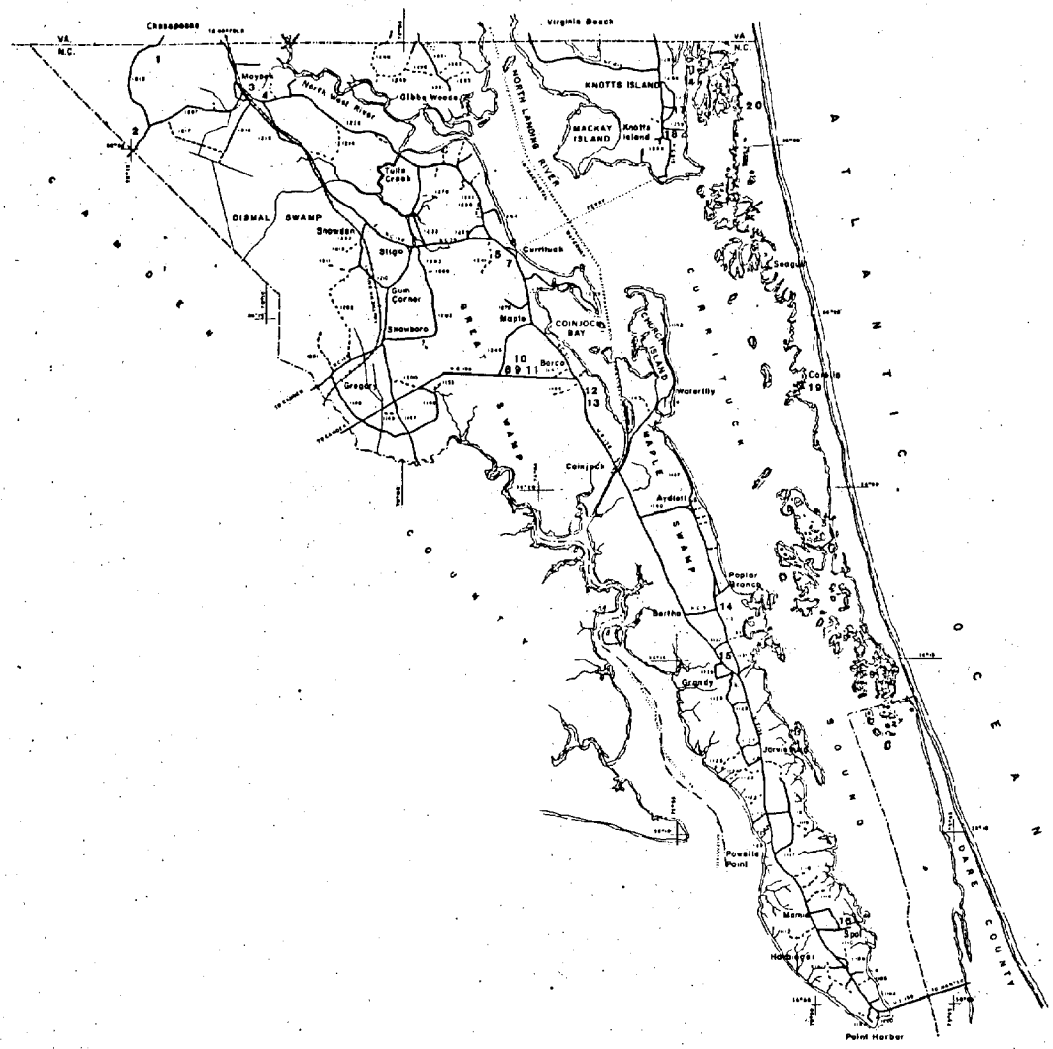
LEGEND
1100 Secondary Road Numbers
Hard Surfaced Road
Unsurfaced Road
State Line
County Line
Intracoastal Waterway
Ferry Route



COMMUNITY FACILITIES

1. UNIVERSAL PARK FIRE DEPARTMENT (PRIVATE)
2. SOLID WASTE DISPOSAL SITE (CONTAINERS)
3. MOYOCK ELEM. SCHOOL
4. MOYOCK FIRE DEPARTMENT
5. HEALTH DEPT.
6. COUNTY COURT HOUSE
7. KNAPP JR. HIGH
8. MAPLE AIRPORT
9. CRAWFORD FIRE DEPARTMENT
10. MAPLE LAND FILL/CONTAINERS SITE
11. CENTRAL ELEMENTARY
12. CURRITUCK HIGH SCHOOL
13. COUNTY LIBRARY
14. GRIGGS ELEM. SCHOOL
15. LOWER CURRITUCK FIRE DEPARTMENT
16. SOLID WASTE DISPOSAL SITE (CONTAINER)
17. KNOTTS ISLAND ELEM. SCHOOL
18. KNOTTS ISLAND FIRE DEPARTMENT
19. COROLLA FIRE DEPARTMENT
20. COROVA BEACH FIRE STATION

1985 LAND USE PLAN

...RITUCK COUNTY, NORTH CAROLINA

COMMUNITY FACILITIES

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LEGEND

1100 Secondary Road Numbers
Hard Surfaced Road
Unsurfaced Road
State Line
County Line
Intracoastal Waterway
Ferry Route
Special Flood Hazard Area

ZONE A 100 Year Flood

SOURCE: FEDERAL EMERGENCY MANAGEMENT AGENCY
FLOOD HAZARD BOUNDARY MAPS

1985 LAND USE PLAN

ITUCK COUNTY, NORTH CAROLINA

FLOOD HAZARD BOUNDARY MAP

Scale in Miles

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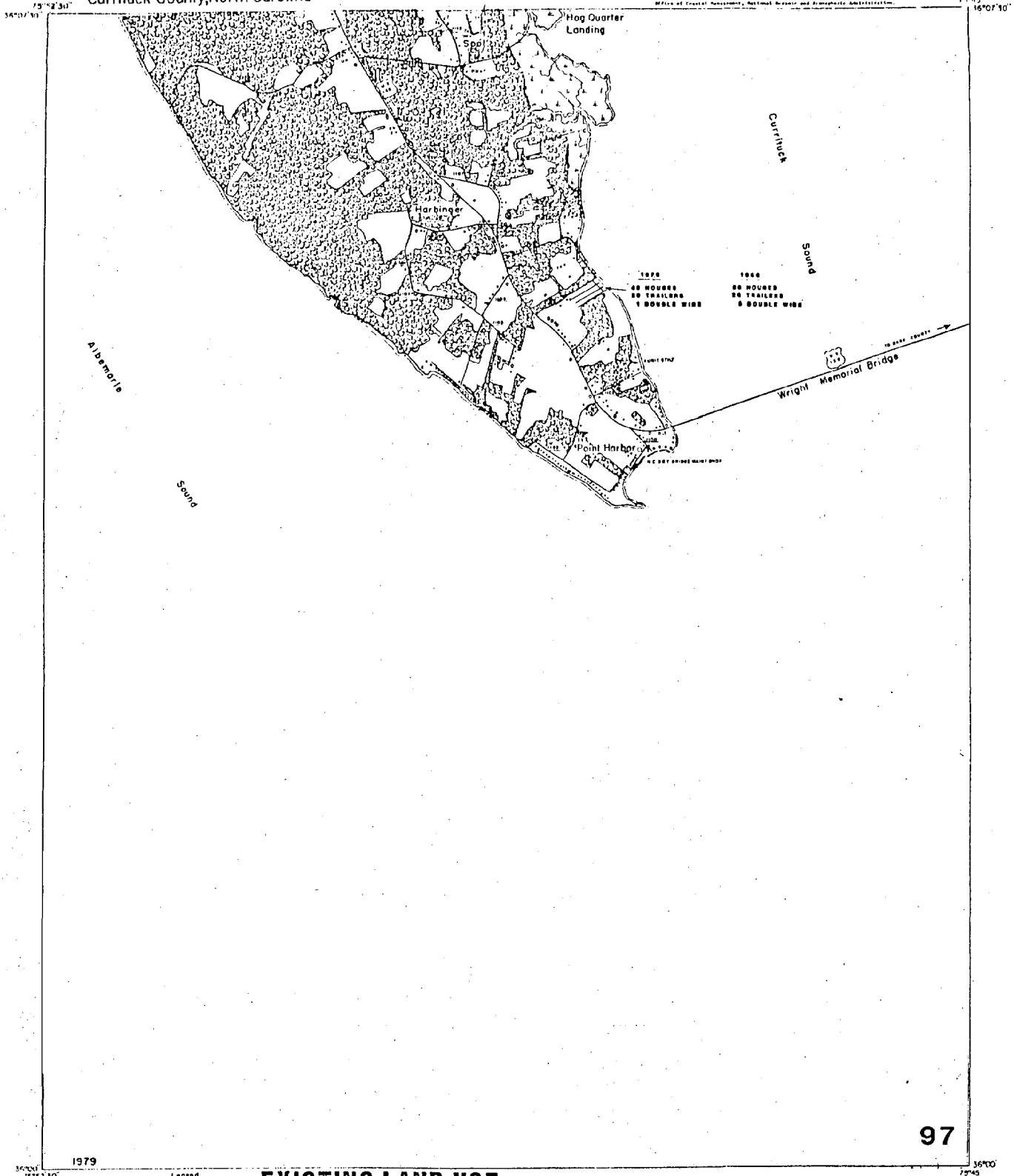

EXISTING LAND USE

1985 LAND USE PLAN UPDATE

By

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0 2000' 4000'
Scale

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landscape architect planning consultants
ASLA Elizabeth City, N.C. Assoc AIP

POWELLS POINT, S.E.

Prepared for
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Currituck County, North Carolina

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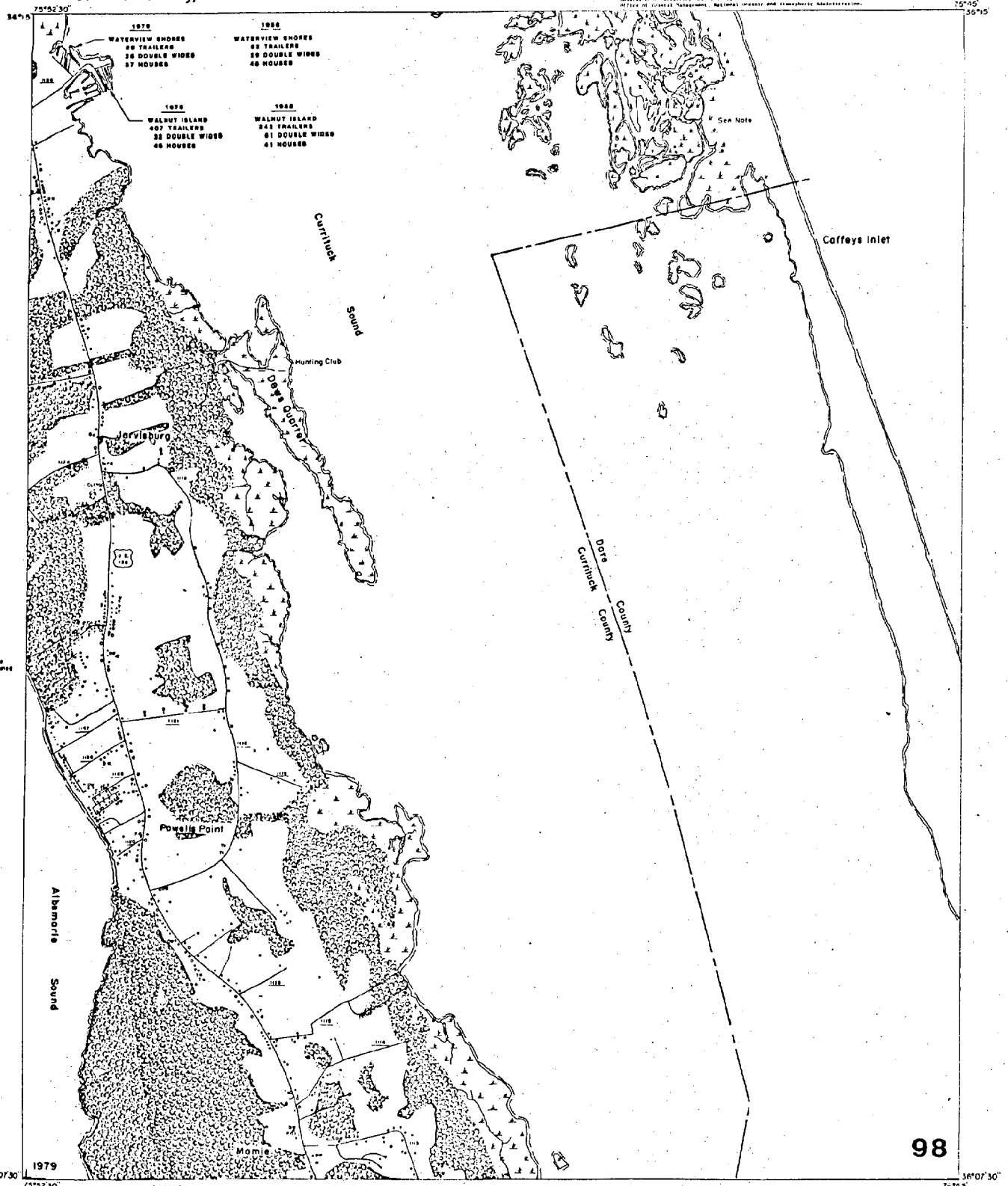

Legend

- Residential
- Trailer
- Double Wide
- Commercial
- Utilities
- Church
- School
- Fire Station
- Post Office
- Governmental
- Dilapidated
- Forest
- Marsh
- Cleared

AS OF MAY 1985 THERE WERE 563 DWELLING UNITS ON THE OUTER BANKS. IN 1979 THERE WERE APPROXIMATLY 250 HOUSES AND 75 TRAILORS ON THE OUTER BANKS.

0 2000' 4000
Scale

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POWELLS POINT NE EXISTING LAND USE

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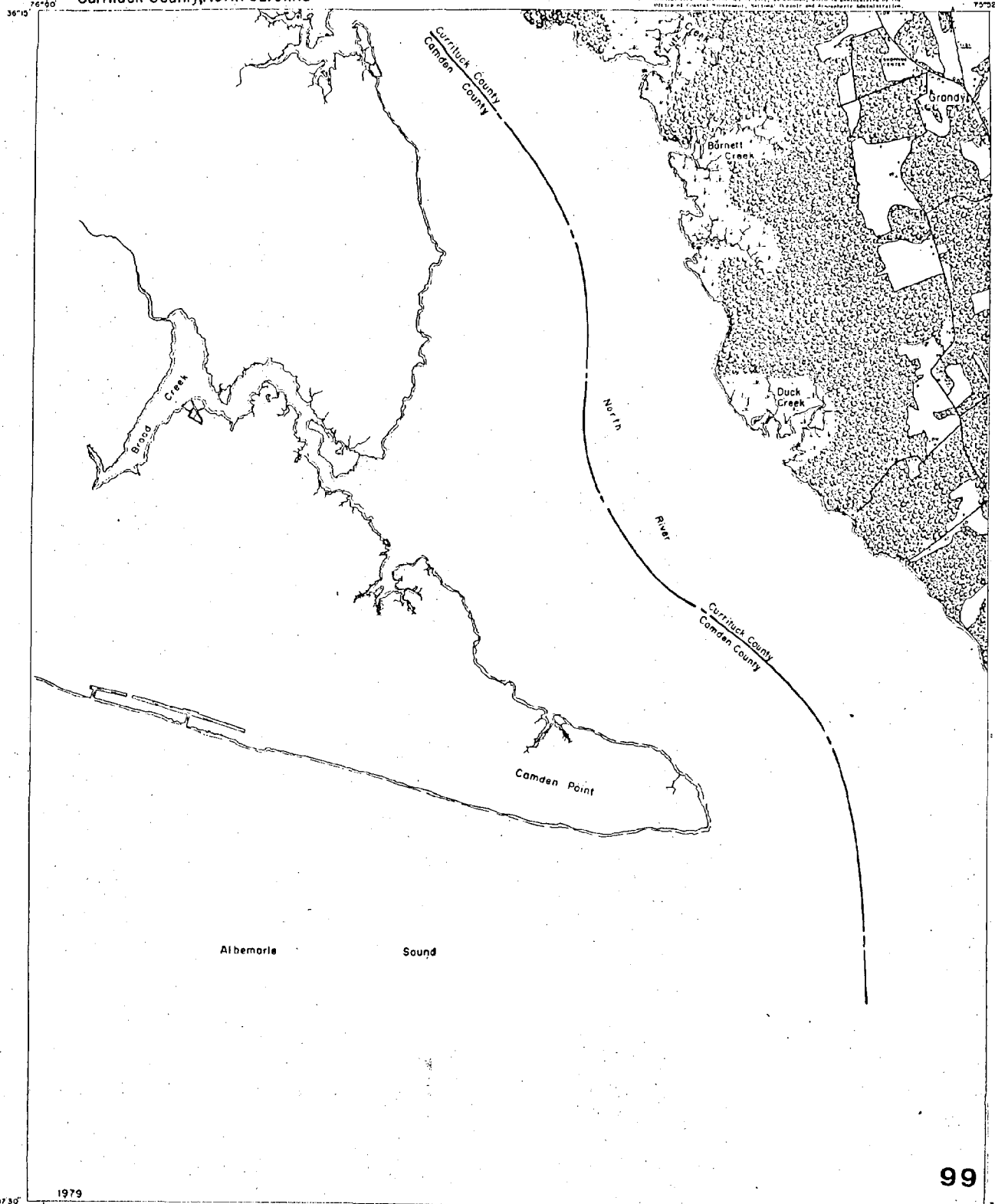

99

1979

Legend

- Residential
- Trailer
- Double Wide
- Commercial
- Utilities
- Church
- School
- Fire Station
- Post Office
- Governmental
- Dilapidated
- Forest
- Marsh
- Cleared

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POWELLS POINT NW

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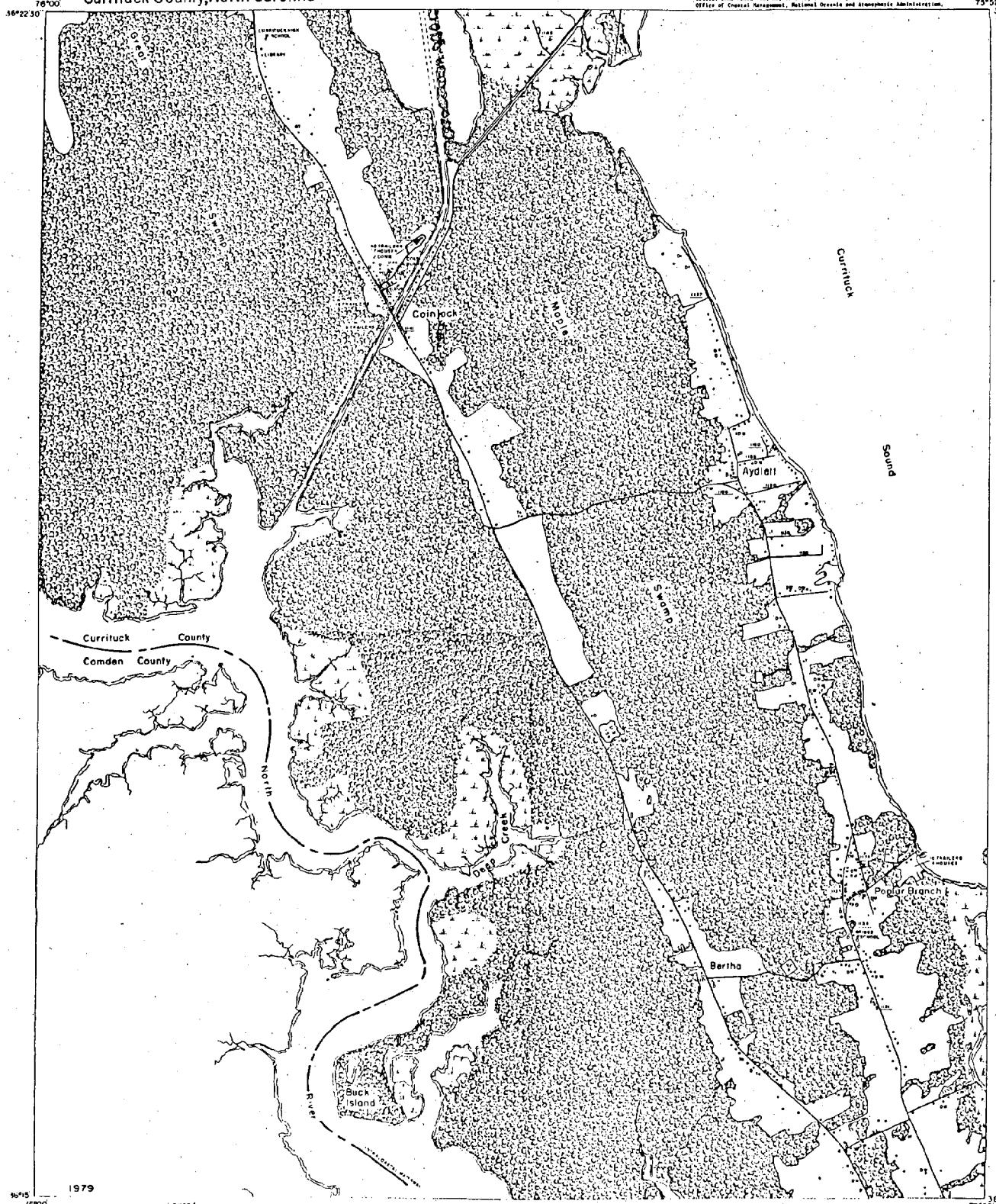

1979

Legend
- Residential
- Trailer
- Mobile Park
- Commercial
- Stores
- Church
- School
- Fire Station
- Post Office
- Governmental
- Orientated
- Forest
- Marsh
- Cleared

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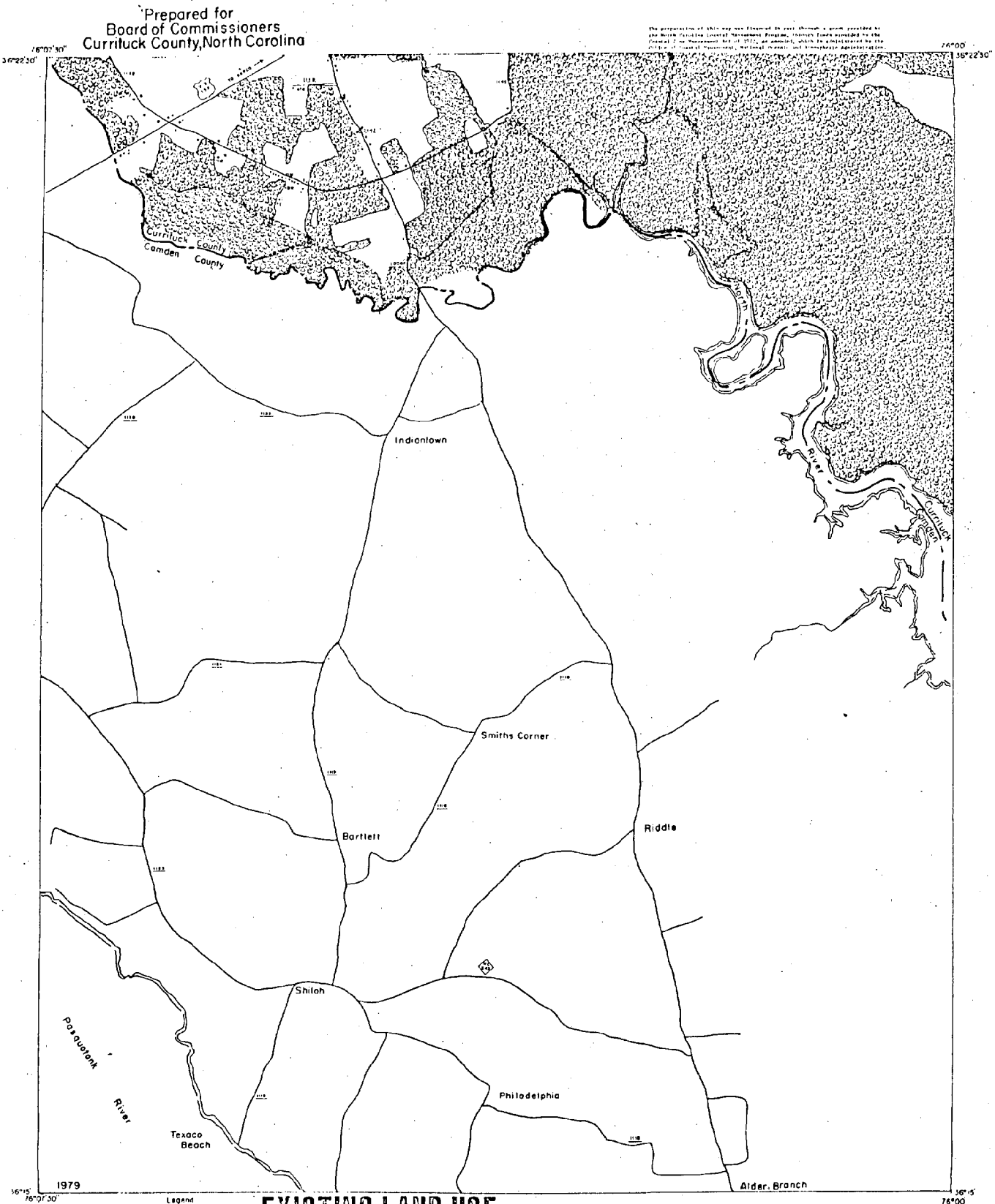

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Elizabeth City, N.C.

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ELIZABETH CITY, C.E.

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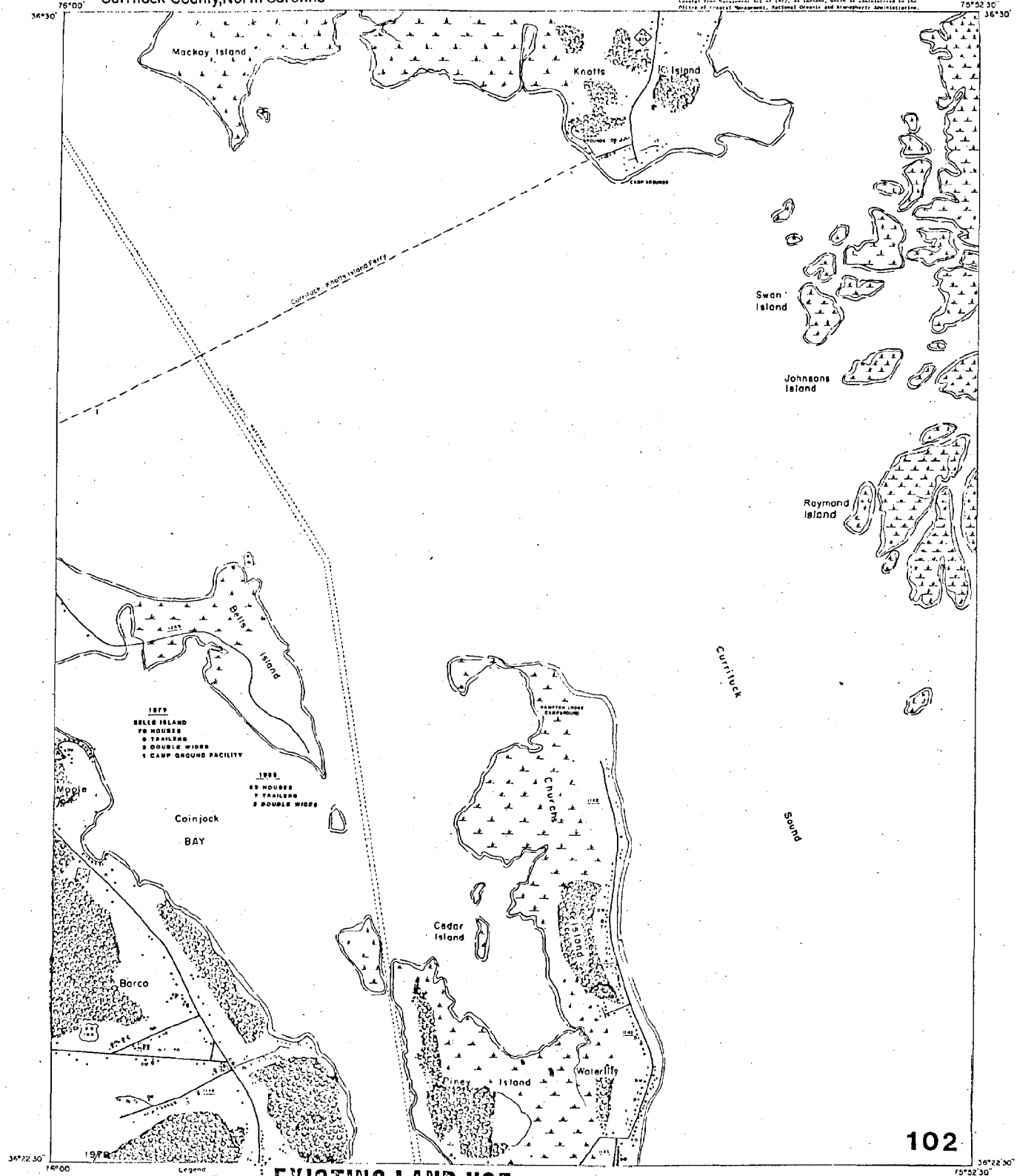

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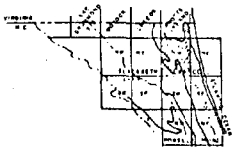
Elizabeth City, N.C.



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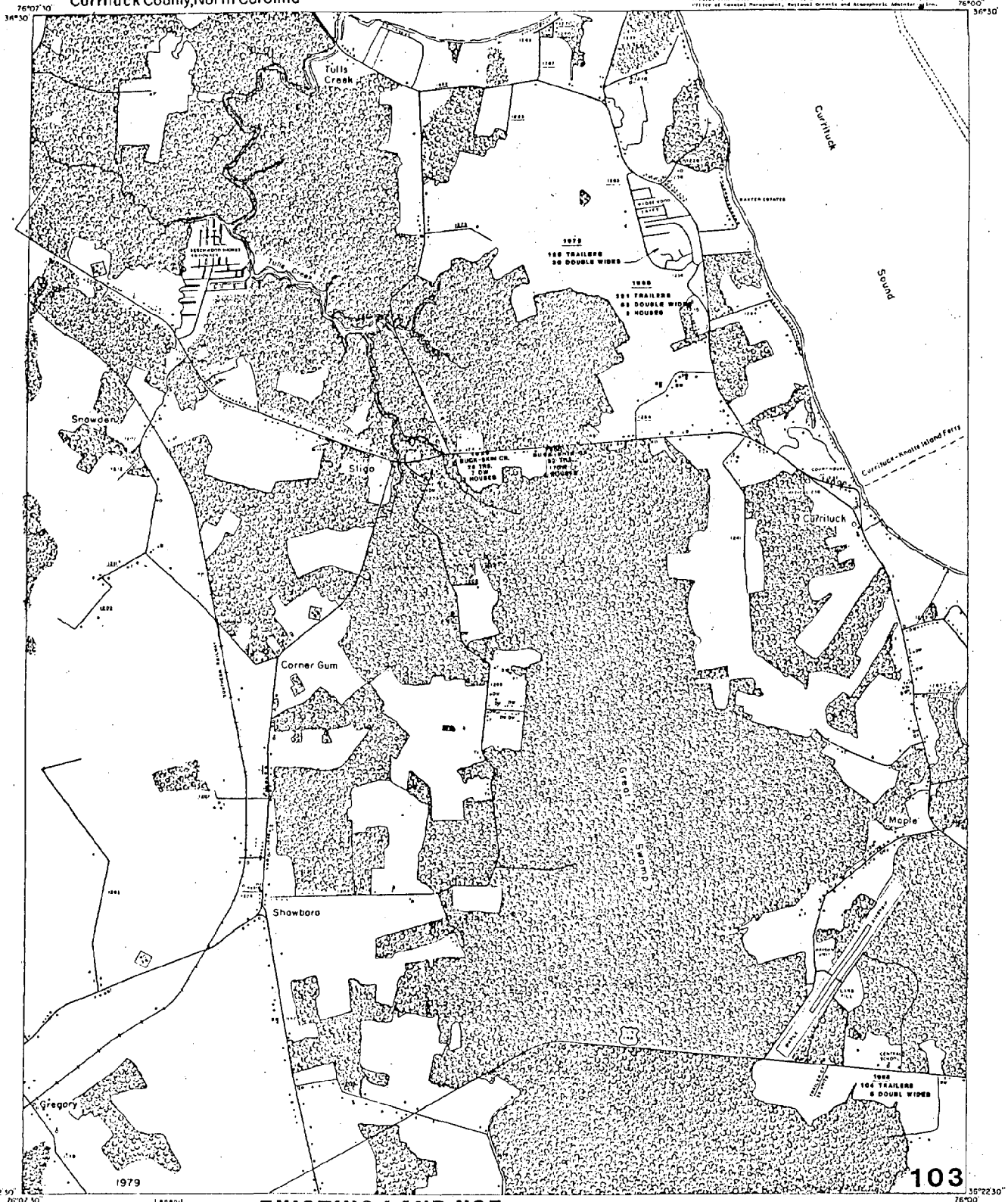

Legend

- Residential
- Trailer
- Double Wide
- Commercial
- Utilities
- Church
- School
- Fire Station
- Post Office
- City/Community Hall
- Fire Department
- Forest
- Marsh
- Cleared

EXISTING LAND USE

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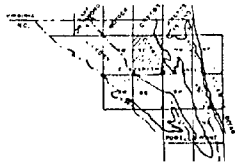

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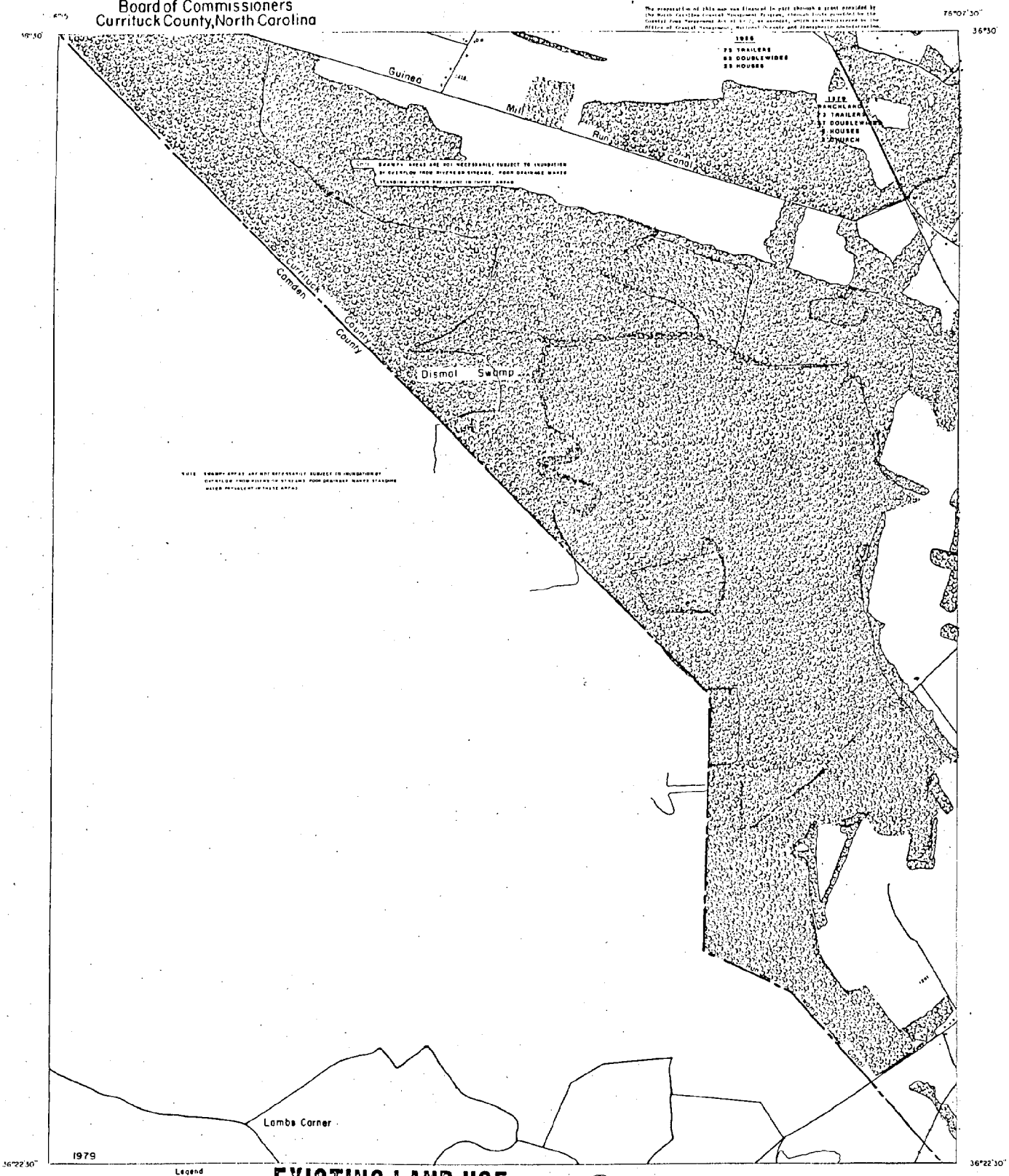

Legend

- Residential
- Trailer
- Double Wide
- Commercial
- Utilities
- Church
- School
- Fire Station
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- Forest
- Marsh
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EXISTING LAND USE

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0 2000 4000

Scale

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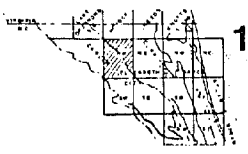

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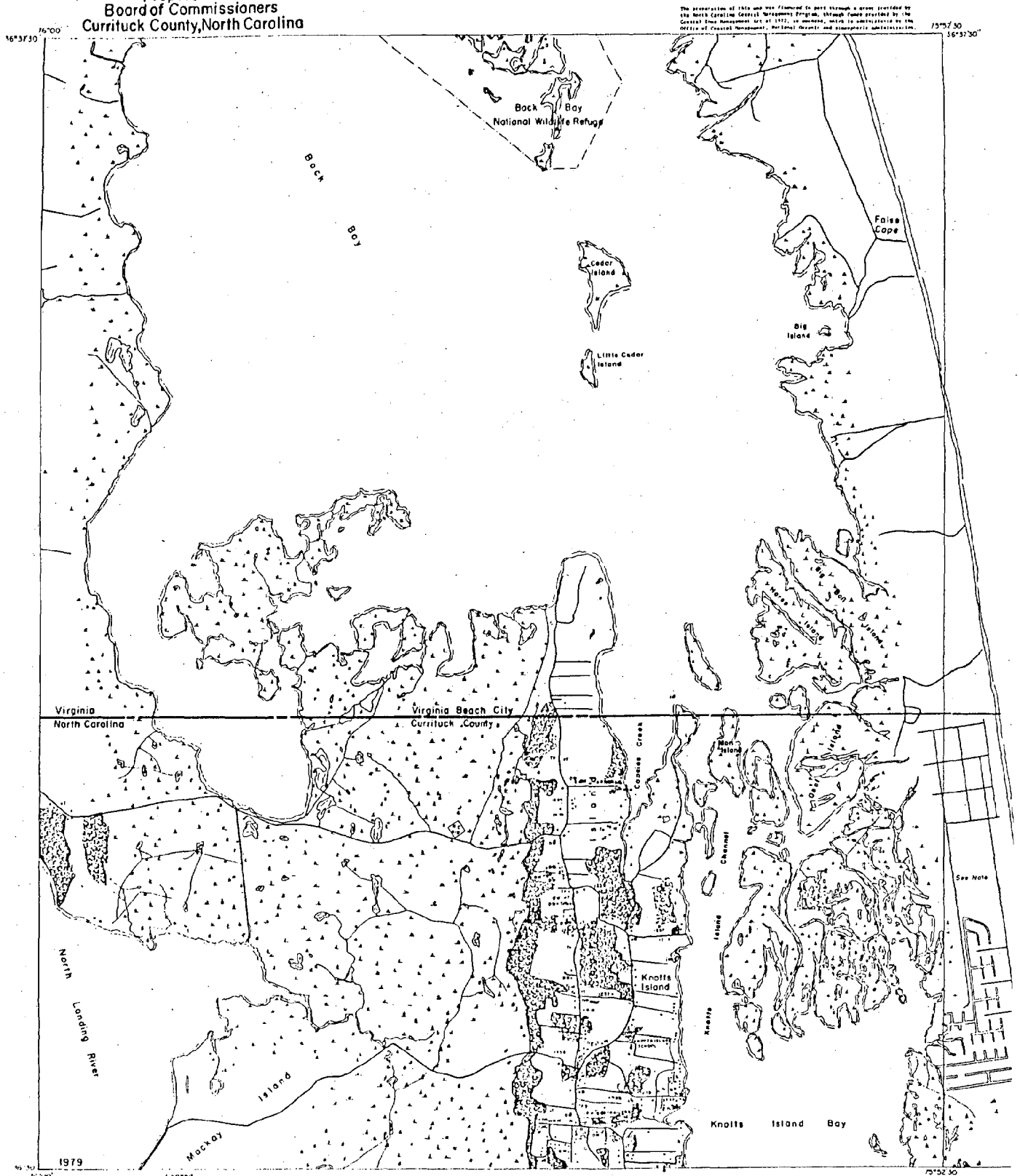
Currituck County, North Carolina



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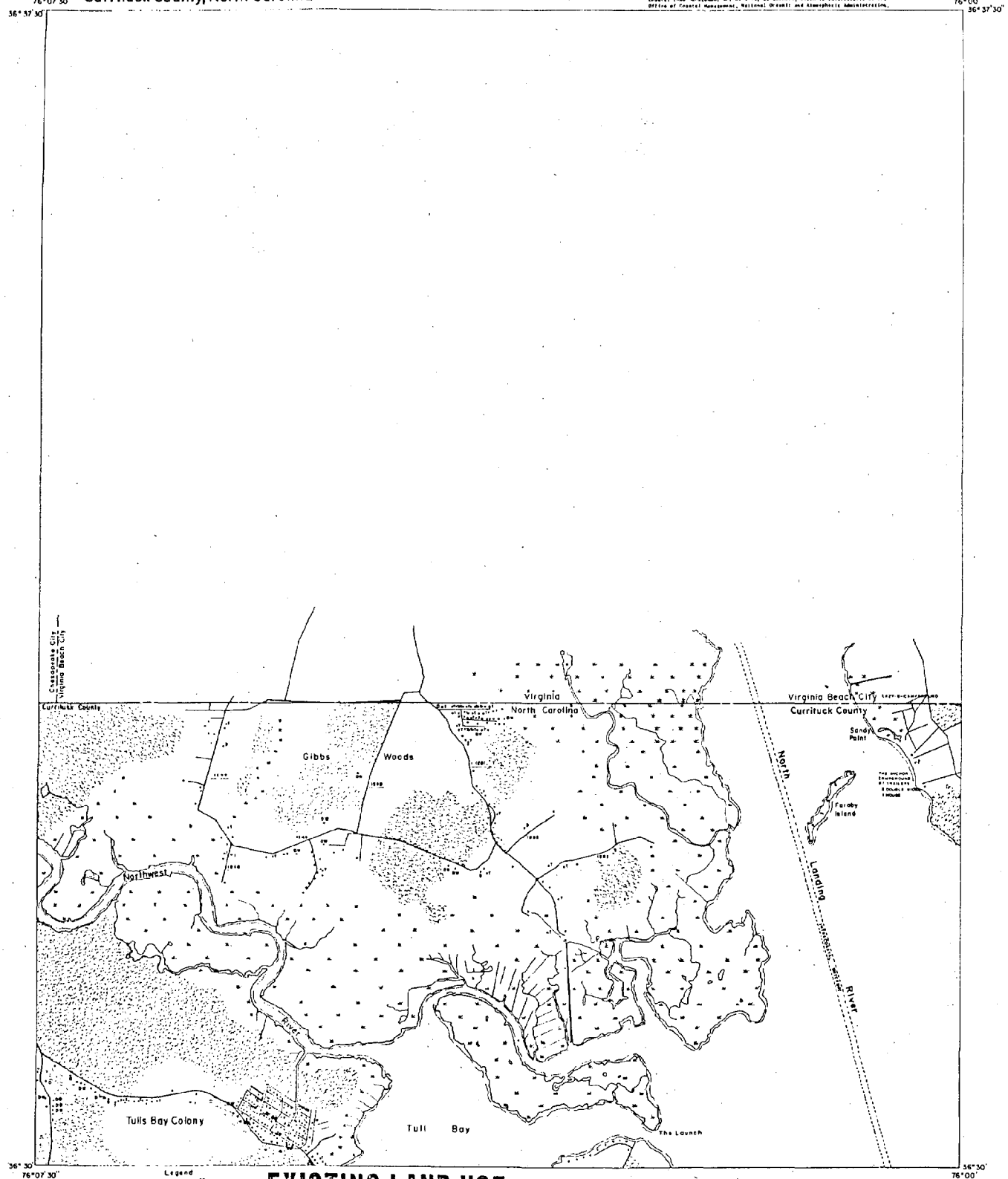

Legend

- Residential
- Trailer
- Double Wide
- Commercial
- Utilities
- Church
- School
- Fire Station
- Post Office
- Governmental
- Dilapidated
- Forest
- Marsh
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EXISTING LAND USE

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0 2000' 4000'
Scale

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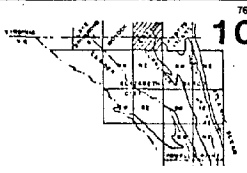
landscape architect planning consultants
Elizabeth City, N.C.



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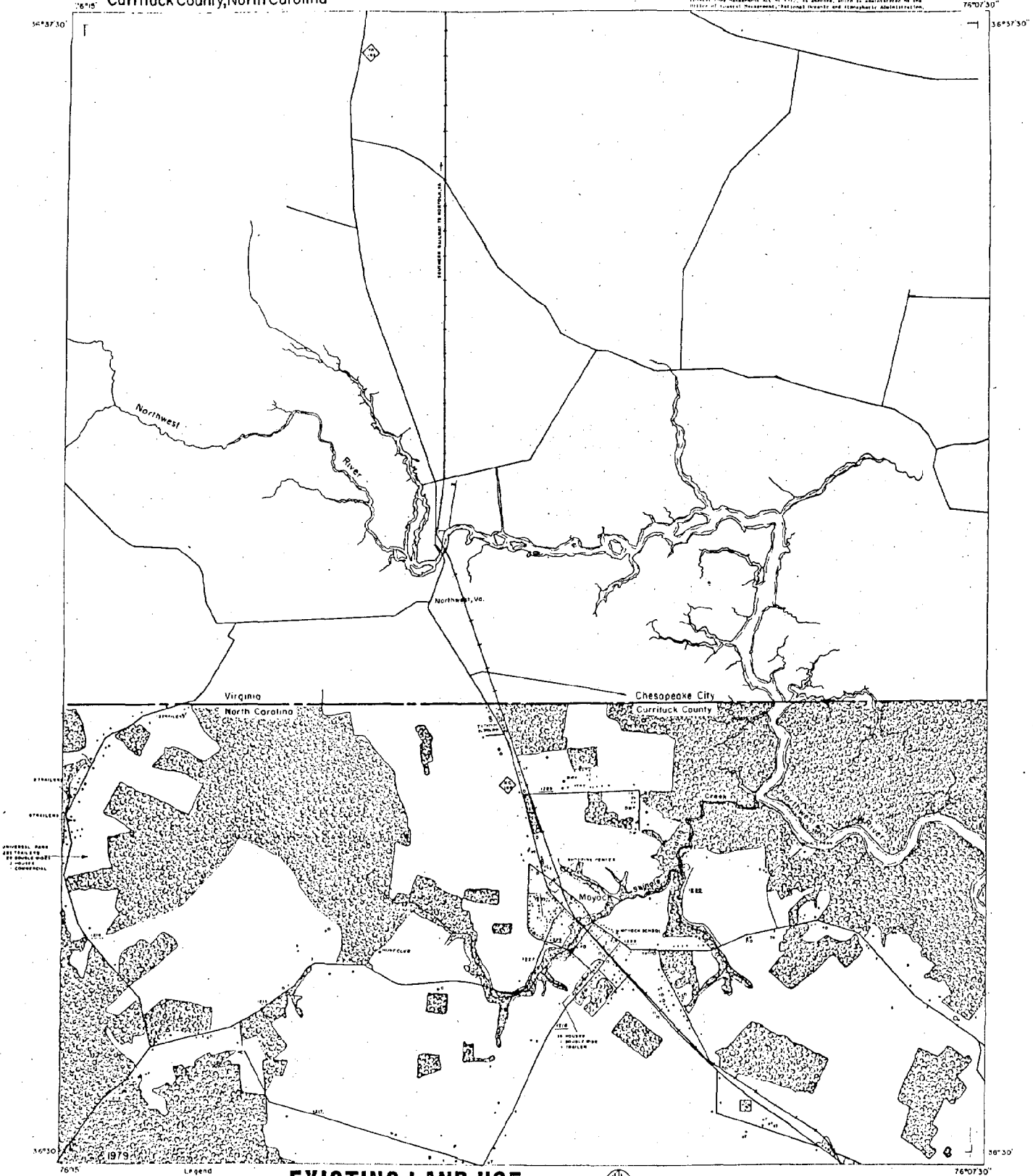
Currituck County, North Carolina



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Currituck County, North Carolina

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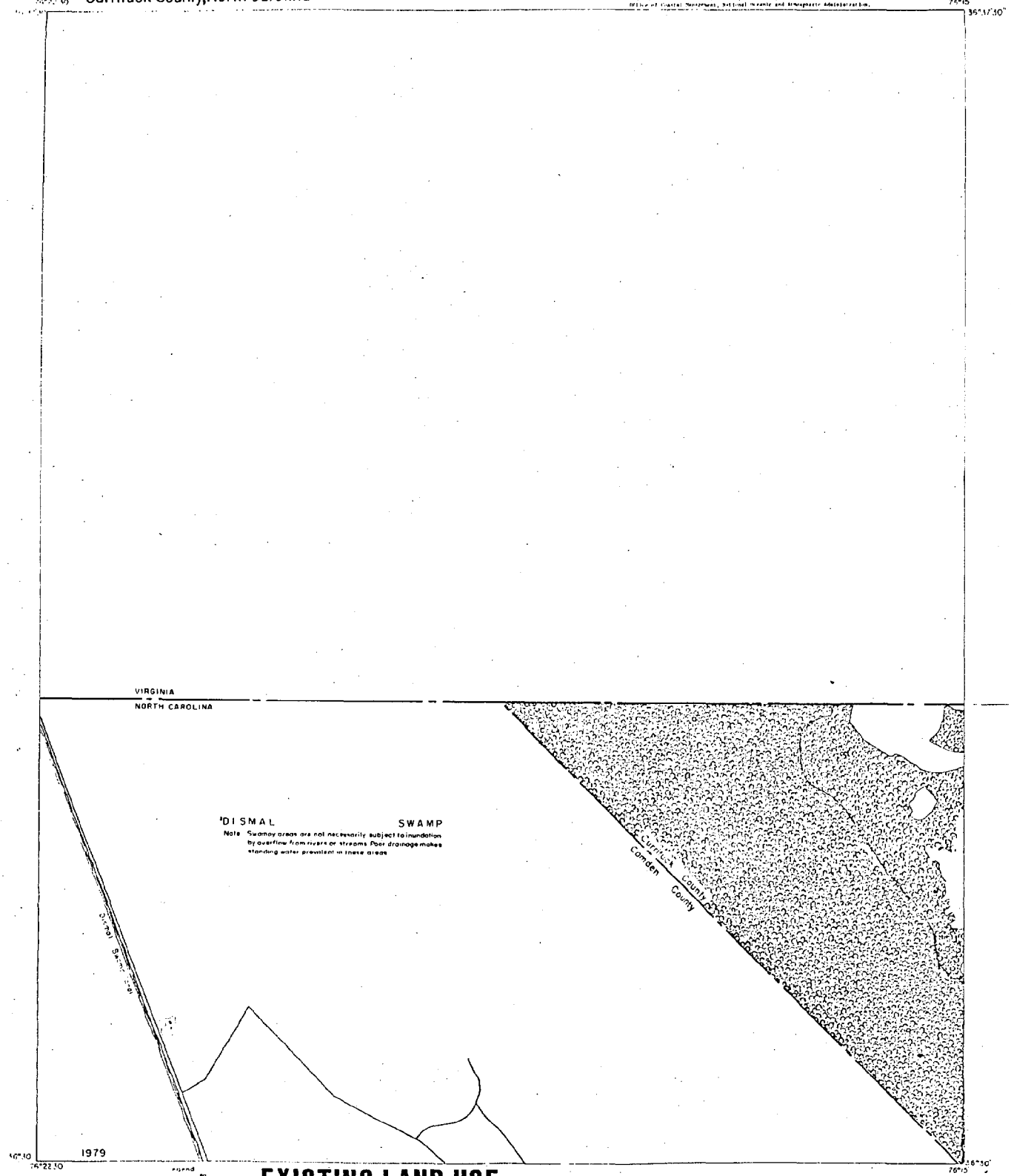

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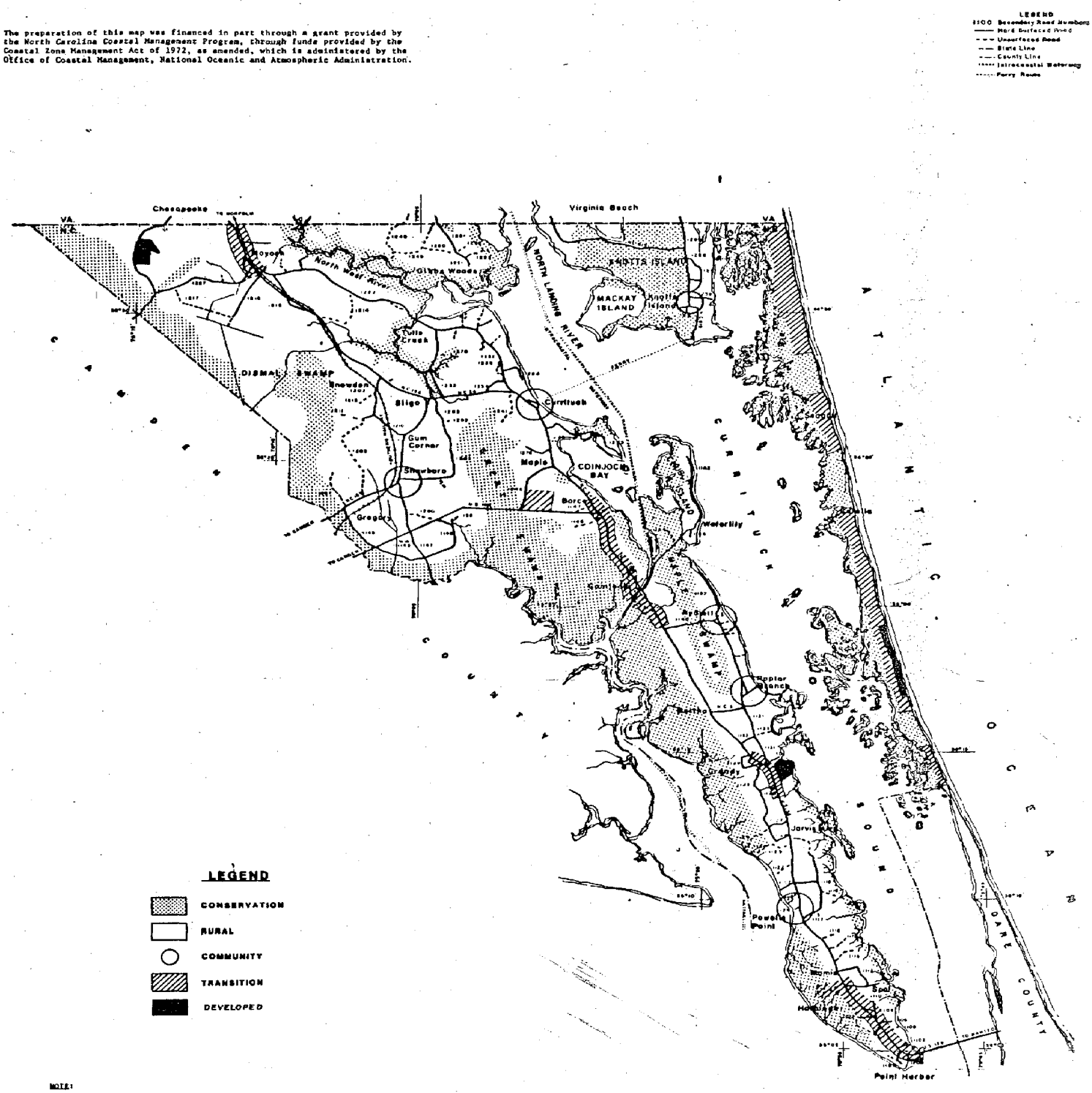

NOTE:

FOR PURPOSES OF FUTURE UTILITY EXTENSIONS ALL CONSERVATION DISTRICT AREAS SHOWN ON LAND CLASSIFICATION MAP BEGIN 100 FEET IN EACH DIRECTION AS MEASURED FROM THE CENTER LINE OF EXISTING ROADS SHOWN IN CONSERVATION AREA. THIS IS TO PERMIT EXTENSION OF WATER OR SEWER LINES WITHIN 100 FEET OF EXISTING ROADS AND THROUGH AREAS DESIGNATED AS CONSERVATION WITHOUT REQUIRING AN AMENDMENT TO PLAN.

ALL SURFACE WATERS INCLUDING THE CURRITUCK SOUND, ALBERMARLE SOUND, NORTH RIVER AND NORTH WEST RIVER ARE PART OF THE CONSERVATION CLASSIFICATION.

1985 LAND USE PLAN

CURRITUCK COUNTY, NORTH CAROLINA

LAND CLASSIFICATION MAP

Scale in Miles

Talbert, Cox & Associates, Inc.